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ABSTRACT

The self-instructional course in patient education has been prepared for the practicing dentist; however, dental hygiene and dental assisting students also may find the information useful. Section 1 explores steps within the educational process and relationships to learning factors, individual needs, motivation, goal orientation, psychological characteristics, educational principles, and self-evaluation techniques. Section 2 deals with factors relating to the patient's capacity to learn such as: individual differences and backgrounds, attitudes towards learning, and emotional atmosphere. (EA)

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chairside psychology in patient education

A SELF-INSTRUCTION COURSE

Prepared by
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CE 002 305

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
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Preface

There is a tremendous gap in our country today between the amount of dental care people need and the amount they receive. One reason for this situation is the low value which many people place on oral health.

The dental office is one of the logical places to educate people about the importance of dental health. *Education* may be defined generally as a combination of the process of teaching and the process of learning. These two processes are so interrelated that they are referred to as the *educational process.*

One school of thought contends that the educational process should be subject centered and teacher controlled. An entirely different philosophy maintains that the educational process should be student centered and student controlled. The proponents of this latter method feel that the students should be free to select what they want or need to learn and the teacher should remain in the background as a resource person. Here the emphasis is on student selection of material and learning activities with a minimum of teacher participation.

We intend to talk mainly about concepts which are valid no matter what your personal educational philosophy may be. In some instances we have included ideas which may be open to controversy simply because we are attempting to steer a middle course between the two philosophies.

Because we are unable to talk with you personally, we must make some assumptions about you. One of our assumptions is that you believe you need to know more than you do at present about education. Another assumption is that your interest is strong enough to induce you to take this course.

We hope that our assumptions are correct and that this course, which is briefly outlined below, will be of value to you.

Objectives of the Course

To give the reader information regarding some basic present-day principles of education.

To help the reader achieve an understanding of these principles.

To supply fundamental knowledge which dentists and dental personnel may apply in teaching patients.

General Scope of the Course

In this course, we will discuss some general principles of education and the significance of each in the person to person educational situation in private dental practice. We will explain the educational process generally and then go through the process step by step. Finally, we will talk about a variety of factors which influence the educational process.

Our discussion will include concepts relating to both parties involved in the educational process—the learner and the educator.

For Whom the Course is Intended

Although this course has been prepared specifically for the practicing dentist, it is believed that dental, dental hygiene and dental assisting students will find the information useful as they begin to participate in the education of patients. Further, it is hoped that the information will be useful to dental auxiliaries in private practice.

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Before You Begin

In this book you do not read the pages consecutively. Instead, you follow the directions given at the end of the page you are reading.

You will find this course different from other self-study materials because it presents information in small steps and then checks to see if you have understood what is being discussed. If you have not grasped the point, you are given added instruction.

This accounts for the "scrambled" path you will take through this material. (It is extremely unlikely that you will need to read each page.)

This book makes use of a self-instructional technique which, within the limitations of the printed page, custom tailors the instruction to fit your needs. If you respond correctly to the questions, you will go ahead rapidly. If your responses indicate a need for more explanation of some concept, we will try to clear up the difficulty before you go further.

From time to time, you will be given an option of leaping ahead or of receiving a fuller explanation. At these points, be realistic. If you go ahead when you don't completely understand what is being discussed, you alone are the loser.

Section I

How and why we learn has long been a major subject of interest to philosophers, psychologists, and educators. Though the experts often quibble over details, they do tend to agree on several basic ideas about learning. These ideas in turn serve as a framework for a variety of educational philosophies.

First, it is generally agreed that learning takes place constantly and always involves some kind of change in the learner's behavior. This concept is based on the premise that life itself is a process of change. Since our environment is constantly changing, we cannot help but change with it. For example, as the temperature changes, we vary the amount or kind of clothing we wear. We have *learned* to do this; our learning involved some kind of change within ourselves.

Now, what are we equating with learning?

(Whenever a multiple-choice question appears, please select an answer and then turn to the page indicated after your answer choice.)

Learning equals change in the temperature.....*Page 4*
Learning equals change in our environment.....*Page 6*
Learning equals change in the learner's behavior.....*Page 8*

YOUR ANSWER: Learning equals change in the temperature.

Sorry. We're not equating temperature changes with learning!

We were using variations in temperature merely as an illustration of how a particular environmental change affects our learning. We learn as we adapt to any environmental changes. We know we have learned because we have changed in some way. The changes we are emphasizing, however, are the ones within ourselves.

If this is so, then what are we equating with learning? Return to page 3 and choose the correct answer.

YOUR ANSWER: Learning consists of acquiring new habits and skills.

Sorry, but this is not the best summary. The statement is correct in what it says, but it just doesn't go far enough.

You'll recall, we hope, that we mentioned other areas in which change, or learning, can take place. The area of knowledge is a major one, of course. All the information, ideas, facts, and theories that you acquire change your fund of knowledge in some way. Your attitudes, or feelings about people, places, and things may also change; you discard old attitudes and acquire new ones, learning as you do so.

So you see, learning involves more than is included in the answer which you chose. Return to page 9 and find the more complete summary.

YOUR ANSWER: Learning equals change in our environment.

No. That's not what we are equating with learning.

Our environment, made up of people, things, situations about us, does change continually. As we adapt ourselves to these changes, we change. When we vary our behavior in some way, such as dressing warmly for cold weather, we say we have *learned*. Naturally our learning is dependent on environmental changes, but we're equating learning with a different kind of change.

You no doubt know the correct answer now. Return to page 3 and find it.

YOUR ANSWER: Learning depends upon consistent practice of carefully changed behavior patterns.

No, this statement does not summarize what we said about learning. Let's see why not.

Practice of a certain kind of behavior, such as a newly acquired skill, is merely a repetition of the same behavior. It doesn't involve new learning if the pattern is already set and no changes take place.

Remember, learning has already occurred when a behavior pattern has been established. Therefore, learning cannot depend upon the practice of this pattern.

Return to page 9 and choose the correct answer.

YOUR ANSWER: Learning equals change in the learner's behavior.

You're right. When learning takes place, change is apparent in the learner's behavior. Therefore, we can equate learning with this change.

Because most human behavior is learned, changes may appear in various forms. Acquiring items of information, forming new attitudes, developing specific habits or skills all constitute changes in behavior, changes we call learning.

Here's the way this works:

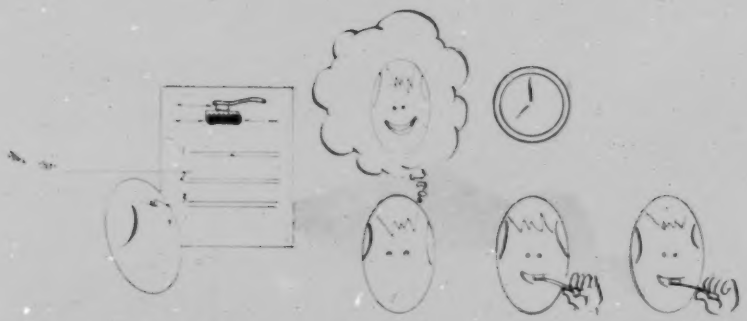
Knowledge—a learner memorizes the reasons for toothbrushing and can repeat them correctly.

Attitude—he begins to feel that toothbrushing is an important habit to cultivate and practice.

Habit—he regularly brushes his teeth after eating.

Skill—he uses the proper brush strokes and wrist movements when brushing his teeth.

Please go on to the next page.



Notice that each area includes some sort of behavior change.

Can you summarize what we have been saying here about learning? Try it by choosing the best summary statement below.

Learning consists of acquiring new habits and skills.....*Page 5*
Learning depends upon consistent practice of carefully changed behavior patterns...*Page 7*
Learning includes a wide variety of changes in behavior.....*Page 10*

YOUR ANSWER: Learning includes a wide variety of changes in behavior.

Correct. These changes may include the use of increased knowledge, the improvement of skills, and the development of attitudes or habits.

Learning may also involve the modification of old behavior. Perhaps our learner who began to brush his teeth regularly after eating wasn't actually developing a new habit. He might have already been a daily toothbrusher—first thing in the morning and the last thing at night. When he changed to brushing regularly after eating, he modified an old habit, but he was still learning.

Read the following paragraph carefully:

> It makes no difference whether a person is acquiring new ideas, attitudes, habits, and skills or merely modifying old ones. In either case, some change is taking place. Therefore the person is learning.

Choose the reaction below which is closest to your own:

The paragraph makes an incorrect assertion about learning.....Page 12
The paragraph makes correct assumptions.....Page 14
The paragraph is confusing.....Page 16

YOUR ANSWER: Learning based on physical and mental maturity.

Not at all. This program presupposes the physical and mental maturity of the reader. Therefore the learning material being presented is not based on maturation.

Maturation can have a real effect on learning. For example, the age at which a child learns to walk, to read, or to write is very definitely dependent upon maturation. The same is true of many skills learned during a lifetime or of the ability to do abstract thinking.

We are necessarily concerned in this program with another type of learning, though. Which of the three types of learning would it *have* to be?

Return to page 11 and choose the correct answer.

YOUR ANSWER: The paragraph makes an incorrect assertion about learning.

Sorry. The paragraph contains no incorrect ideas. Here it is again for you to review:

> It makes no difference whether a person is acquiring new ideas, attitudes, habits, and skills or merely modifying old ones. In either case, some change is taking place. Therefore the person is learning.

You'll remember, we hope, that we said learning may involve modification of old behavior as well as acquisition of new behavior. Since some kind of change takes place in both instances, we can assert that learning is also occurring.

Return to page 10 and reread the information to see if you have a different reaction now.

YOUR ANSWER: Learning based on observation and experience.

No. The program does not involve this type of learning.

Observation, experience, reactions to people, and situations about us all help to change our ideas or our behavior. This kind of learning is something we do ourselves, either consciously or unconsciously.

For example, most teenagers are anxious to be accepted socially by others of their own age group. Thus they tend to adapt their ideas and behavior to conform with that of the group to which they want to belong. Since this represents change in behavior, we say that learning has taken place.

We are concerned in this program, however, with another type of learning. Return to page 14 and choose the correct answer.

YOUR ANSWER: The paragraph makes correct assumptions.

Yes. The paragraph is actually restating some of the basic things we've said about learning. When learning takes place, there will be a change in behavior.

There are several ways this learning might occur:

1. We learn because of physical growth or maturation. A baby learns to walk when he becomes physically mature and coordinated enough to do so.
2. We learn by observing what others about us are doing or from personal experience.
   A child may learn to fear storms by watching his mother's tense reaction to them. Or he may learn this same fear from seeing a tree struck by lightning during a storm.
3. We learn by the conscious direction of a teacher, a more formal type of learning.

This program is aimed at helping you to learn the basic principles of education. Which of the three kinds of learning we have just discussed is involved in this course?

Learning based on physical and mental maturity.....*Page 11*
Learning based on observation and experience.....*Page 13*
Learning based on teacher guidance and direction.....*Page 17*

YOUR ANSWER: To gain a thorough knowledge of educational principles.

No. This is important, of course, but it should not be a dentist's primary goal in teaching.

Let's review our definitions of learning and teaching:

> Learning involves some kind of change in a learner's behavior—knowledge, attitudes, habits, and skills.
>
> Teaching involves guiding a learner through this process of learning.

Knowledge of educational principles will certainly help a dentist in his teaching if he puts this knowledge to work. However, we hope you can see from reviewing the definitions that any teaching should have another goal.

Return to page 17 and find that goal.

YOUR ANSWER: The paragraph is confusing.

All right. Let's see if we can clear up the confusion for you. Here's the paragraph again:

> —It makes no difference whether a person is acquiring new ideas, attitudes, habits, and skills or merely modifying old ones. In either case, some change is taking place. Therefore the person is learning.

A person who modifies previous behavior in some way, such as improving an attitude or developing a more complex skill, is learning just as surely as the person who acquires a brand new attitude or skill. Since some kind of change takes place in both instances, we say that learning is also occurring.

Please return to page 10 and reread the information to see if you have *changed* your reaction!

YOUR ANSWER: Learning based on teacher guidance and direction.

Yes. We are directing your learning about educational principles in a formal teaching situation. Although some of these principles apply to all kinds of learning, we are primarily concerned in this course with the conscious formal process of education.

Teaching involves guiding a learner through the learning process. The role of a teacher is important, for he or she must know how to direct learning so as to help people make desirable changes in their behavior. Here's where some knowledge of educational principles comes in handy!

The dentist has many excellent opportunities for teaching. The patient is far more likely to learn if the dentist consciously sets out to teach him. For example, if the patient thinks that periodic prophylaxis will eventually cause abrasion of the teeth, he might be helped to learn the value of this treatment more readily by the dentist's careful explanation and demonstration than by merely watching the treatment procedure.

With our definitions of teaching and learning in mind, what should be the dentist's primary goal in his teaching?

To gain a thorough knowledge of educational principles.....Page 15
To promote beneficial changes in his patient's behavior.....Page 18
To be able to explain and demonstrate various treatment procedures accurately..Page 20

YOUR ANSWER: To promote beneficial changes in his patient's behavior.

Right. This is a primary goal for *any* kind of teaching. A thorough knowledge of educational principles and the ability to explain and demonstrate procedures should help the dentist achieve this goal.

You'll notice that we've talked about *beneficial* changes. No matter how carefully a teacher may set up a learning situation, unplanned changes inevitably occur. These changes may be desirable or undesirable; they may accompany the planned change, or they may occur instead of it.

Here's an illustration. A dentist teaches a young patient the proper technique of toothbrushing, intending that the child learn to practice this technique regularly. The child may or may not learn what the dentist teaches. Two *unplanned* changes which might occur are as follows:

1. The child might influence his entire family to adopt better oral hygiene procedures, an unplanned but quite desirable change accompanying the dentist's teaching.
2. The child might brush so enthusiastically that he traumatizes the gingiva, an unplanned and undesirable change occurring in addition to what the dentist was teaching.

Which word below best describes the unplanned changes which might result from teaching?

Inevitable.....*Page 21*
Undesirable.....*Page 24*
Beneficial.....*Page 26*

YOUR ANSWER: The patient is probably trying to satisfy a psychological need.

This would not seem likely. Let's look at the two categories of needs once more:

1. Physiological needs—hunger, thirst, fear, avoidance of pain and danger, self-preservation.
2. Psychological needs—desire for security, approval, self-respect, new experiences, success.

The psychological needs are very important in determining human behavior. Whereas physiological needs, such as pain from a neglected tooth, can be satisfied completely—perhaps by one visit to the dentist—our needs for security or approval are not so easily taken care of. Because of this, attempting to satisfy the stronger psychological needs often produces more effective learning.

Now please proceed to page 25.

YOUR ANSWER: To be able to explain and demonstrate various treatment procedures accurately.

No, this should not be a dentist's primary goal in teaching.

Let's review our definitions of learning and teaching:

> Learning involves some kind of change in a learner's behavior—knowledge, attitudes, habits, and skills.
>
> Teaching involves guiding a learner through this process of learning.

Accurate explanation and demonstration of treatment procedures will be an important part of any dentist's teaching, of course. But concentration on this phase is likely to detract from a more important goal.

Return to page 17 and select the correct answer.

YOUR ANSWER: "Inevitable" best describes the unplanned changes which might result from teaching.

Yes. Unplanned changes, whether beneficial or undesirable, are inevitable in teaching situations. Remembering this helps prevent possible discouragement when such unplanned changes occur.

From here on we'll talk more specifically about the dentist-educator and his patient-learner. Since our purpose is to give fundamental information which the practitioner may use in teaching his patients, in this part of the course we'll discuss the actual steps of the formal educational process. Of course we're aiming at the ideal; therefore, we'll present the steps which are necessary if the educational process is to be as productive as possible, *i.e.*, the steps needed to cause the patient to change his behavior or learn. In addition, we'll discuss how the dentist can apply these basic principles we've included in order to teach more effectively and efficiently.

Please go ahead to page 22.

Before we continue, we'd like to introduce a few individuals to you. Mr. and Mrs. Grinston, their sons Gary (16) and Greg (5), and their daughter Grindl (10), are a middle-class, American family with the average number of dental problems. They make more or less regular visits to their dentist, Dr. Frank, but they don't really have much interest in oral health. The Grinstons and Dr. Frank will provide specific illustrations for our course.

In this course most of our examples of dental health education will deal with toothbrushing. The practitioner will also be able to apply the principles of education in other instances, of course.

Please go on to the next page.

The first step in the education process is the recognition of needs. Needs can be described as driving forces that prompt us to act. Here are a few examples divided into two main categories:

1. Physiological needs, such a hunger, thirst, sleep, fear, avoidance of pain and danger. These are basic needs that aid in self-preservation.
2. Psychological needs, such as desire for security, approval, success, recognition, new experiences. These needs are often stronger than the physiological needs and can seldom be satisfied completely.

We learn as we act to satisfy these various needs. One theory is that learning actually takes place in that period of time between the recognition of a need and the satisfaction of that need.

Thus, the patient who hurries to a dentist's office with an aching tooth is acting to satisfy a need. Which kind of need is the patient probably trying to satisfy?

Psychological.....*Page 19*
Physiological.....*Page 25*

YOUR ANSWER: "Undesirable" best describes the unplanned changes which might result from teaching.

No. This is not an accurate answer, for an unplanned change may sometimes be desirable. Remember our illustration about the child who influenced his family to adopt better oral hygiene procedures? This might be unlikely and probably unplanned by the dentist, but it certainly would be a most desirable change.

There is a better word to describe these unplanned changes. Return to page 18 and find it.

YOUR ANSWER: The patient is probably trying to satisfy a physiological need.

Yes. Pain is a more basic need; as such it is easier to recognize and to satisfy than the psychological needs.

The patient in pain is quite aware of his specific need for relief. But he may be completely oblivious to other needs for dental treatment or dental health education. Not all of our needs are conscious ones, by any means.

Perhaps, for example, the patient thinks he takes adequate care of his teeth because he brushes faithfully once a day before breakfast. Thus he is unaware of his need for education on frequency, timing, and proper technique. Although he may have several needs operating at the same time, one need will always dominate. In this case, the need for relief from pain must be satisfied before he will be able to recognize his other, less compelling needs.

Now where in the process of acting to satisfy this one need do you think the patient will learn?

Between the time the pain begins and the time it is relieved.....Page 27
Before the patient visits the dental office..Page 29
After the pain is relieved.....Page 31

YOUR ANSWER: "Beneficial" best describes the unplanned changes which might result from teaching.

No. In fact, unplanned changes are probably more often undesirable than beneficial. Remember our illustration about the child who brushed his teeth so enthusiastically that he traumatized the gingiva? This might be unlikely in most cases and certainly unplanned by the dentist; it definitely would be most undesirable.

There is a more accurate word to describe these unplanned changes. Return to page 18 and find it.

YOUR ANSWER: Between the time the pain begins and the time it is relieved.

This corresponds to the theory that learning takes place in that period of time between the arousal of need and its satisfaction.

Since the patient is likely to be unconscious of his other needs, the dentist assumes the responsibility of first recognizing these needs and then helping the patient become aware of them. As the dentist diagnoses the patient's oral health needs, he can simultaneously diagnose the patient's educational needs. Some needs will be readily apparent by observing the condition of his mouth; others will become evident by asking such questions as: Do you brush after breakfast? After lunch? After snacks? How do you brush? or When did you last visit a dentist?

Please go ahead to the next page.

Writing down observations on each patient's dental education needs (just as the noting of treatment needs) will provide a good starting point for the dentist's teaching. An arbitrary beginning, though convenient, ignores the fact that learning for each person starts at the point of his *own* needs.

Now, what is the dentist's first task as an educator?

To diagnose the patient's treatment needs.....Page 30
To help the patient recognize his existing educational needs.....Page 32
To recognize the patient's educational needs.....Page 34

YOUR ANSWER: Before the patient visits the dental office.

Wait a minute! If the patient hasn't even begun to act on his need, are you sure he can satisfy it and thereby learn? We mentioned the theory earlier that learning takes place within the period of time between the recognition of a need and the satisfaction of that need.

We have also mentioned that learning is both continual and multiple. Thus it is not always possible to point out one time period when a specific learning experience occurs. It is desirable, though, that a need be felt or recognized so that learning may be facilitated. If there is no need, no learning is stimulated.

Now return to page 25 and choose another answer.

YOUR ANSWER: The dentist's first task as an educator is to diagnose the patient's treatment needs.

No, the phrase "as an educator" is the key to this question.

Naturally the dentist's first task as a *practitioner* would be to look for the patient's existing treatment needs. If he is alert during this examination, he will also be able to observe areas of real need for dental health education.

For example, a patient with abrasions on the cuspids and bicuspids may well be using a horizontal toothbrush motion. Here may be an unconscious area of need, one which the dentist-educator can bring to the patient-learner's attention.

You should have no trouble selecting the correct answer now. Return to page 28 and try again.

YOUR ANSWER: After the pain is relieved.

Probably not for this particular need. We mentioned the theory earlier that learning actually takes place within the period of time between the feeling or recognition of need and the satisfaction of that need.

Even though the patient is in no frame of mind to learn something like how the X-ray machine operates or why it is important to maintain a regular diet, nevertheless he is learning something before the pain is relieved. Perhaps he learns that the dentist is sympathetic or that he should have visited the dental office sooner.

After the patient's pain is relieved (his need has been satisfied), he continues learning as he acts to satisfy new needs.

Return to page 25 and choose another answer.

YOUR ANSWER: The dentist's first task as an educator is to help the patient recognize his existing educational needs.

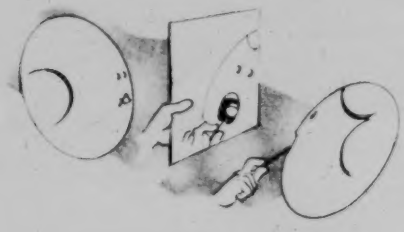
You're a jump ahead of us. We said that the dentist *first* notes the patient's educational needs as he diagnoses the treatment needs. Only then is he ready to help the patient see these needs.

Let's think of an example. Mr. Grinston has arrived in Dr. Frank's office to have the dentist examine an aching tooth. During his observation of Grinston's mouth, Dr. Frank notices slight abrasions on the cuspids and bicuspids. Immediately Dr. Frank suspects that Grinston could be using a horizontal toothbrush motion. As an *educator*, Dr. Frank may have accomplished his first task—that of recognizing a specific need for education in the proper technique of brushing.

Now return to page 28 and select the correct answer.

YOUR ANSWER: Dr. X talks with his patients about oral hygiene, answering their questions and pointing out their educational needs in relation to their treatment needs.

Yes. Dr. X combines the approaches of telling and guiding, using treatment needs as a basis for discussion of educational needs. Dr. Y tries to educate every patient in the same way, while Dr. Z leaves to chance the individual discovery of needs.



It has been proven repeatedly that we tend to learn what we believe we need to know. Thus it follows that we are much more likely to learn if we recognize our own needs. For example, if Dr. Frank tells Mr. Grinston that he needs periodic prophylactic treatments, Grinston might not agree.

Dr. Frank might use his mirror to show his patient the deposits on his teeth and could explain how ordinary brushing will not remove these deposits.

What is most likely to cause Grinston to want to learn about periodic prophylaxis?

Hearing Dr. Frank say, "You need periodic prophylactic treatments." ..... *Page 35*
Looking at his own teeth in a mirror ..... *Page 37*
Realizing his need to know something about prophylaxis ..... *Page 39*
Listening to Dr. Frank's monologue about prophylactic treatment ..... *Page 41*

YOUR ANSWER: The dentist's first task as an educator is to recognize the patient's educational needs.

That's right. The dentist can often accomplish this while he diagnoses the patient's treatment needs. Now we're ready to think about the next phase, that of helping the patient to become aware of his own needs.

Admittedly, this is a more difficult task. Here are two possible approaches:

1. The dentist may simply tell the patient what his educational needs are, much as he tells him about his treatment needs.
2. The dentist may guide the patient toward a realization of his needs through conversation and demonstration, usually a more successful technique for convincing a person of his needs.

Which dentist below might be most successful in patient education?

Dr. X talks with his patients about oral hygiene, answering their questions and pointing out their educational needs in relation to their treatment needs.....Page 33
Dr. Y tells his patients frankly just what their educational needs are and then gives each a pamphlet outlining the major steps of good oral hygiene.....Page 36
Dr. Z cares for his patients' treatment needs and hopes the educational needs will become apparent to them as he proceeds..Page 38

YOUR ANSWER: Hearing Dr. Frank say, "You need periodic prophylactic treatments" is most likely to cause Grinston to want to learn about prophylaxis.

We doubt it. Remember, telling a patient what he needs may be the easiest method for the dentist, but it is not necessarily the most effective. Let's review for a moment.

We said that a person tends to learn what he thinks he needs to know. Therefore Grinston is much more likely to want to learn about periodic prophylactic treatments because he realizes the need, not simply because Dr. Frank recognizes the need and tells him. Of course Grinston probably won't recognize this need entirely on his own. This is where Dr. Frank can guide by explanation, demonstration, and conversation.

Return to page 33 to choose a better answer.

YOUR ANSWER: Dr. Y tells his patients frankly just what their educational needs are and then gives each a pamphlet outlining the major steps of good oral hygiene.

Dr. Y must be commended for trying to educate his patients about dental health. Although he may help some of his patients recognize their needs, we doubt that his methods will be notably successful. Let's examine them more closely.

First, telling the patients their needs won't always convince them that they should change their habits or attitudes. This technique might work best with those patients particularly interested in improving their dental health or general appearance.

Second, if he gives the same pamphlet to each patient, Dr. Y assumes they all have the same needs. But learning for each person starts at the point of his *own* needs. Any general technique of dental education may be quite useless unless it is geared to the individual's need.

We think another dentist would be more successful in patient education. Return to page 34 and choose a better answer.

YOUR ANSWER: Looking at his own teeth in a mirror is most likely to cause Grinston to want to learn about periodic prophylaxis.

Possibly—but unlikely. How many times do you suppose Grinston has looked at himself in a mirror, teeth included, since his last prophylaxis two years ago?

Naturally Grinston would not be conscious of his teeth every time he looked in a mirror, but he no doubt would have noticed the increase of stain and deposits. It's not possible to know exactly what finally convinces a person of his need. Most educational psychologists seem to agree that a person tends to learn what he thinks he needs to know. This is why helping a patient to recognize his own need is an important part of the first step in the educational process.

Now return to page 33 and choose a better answer.

YOUR ANSWER: Dr. Z cares for his patients' treatment needs and hopes the educational needs will become apparent to them as he proceeds.

Do you really think Dr. Z will be very successful in educating his patients? What if their other needs don't become evident? This can happen, especially if Dr. Z makes no real effort to point out certain things to his patients.

As an educator, the dentist will need to be constantly alert to possible opportunities for teaching about dental health. First he recognizes his patients' needs, then he helps the patients become aware of these needs. If leaving the discovery of these needs to chance is not wise, what method might be more successful?

Return to page 34 and choose a better answer.

YOUR ANSWER: Realizing his need to know something about prophylaxis is most likely to cause Grinston to want to learn about the subject.

Good. So far we've been talking about recognizing needs, the first step in the educational process for both the dentist-educator and the patient-learner. The next important step is the actual expression of these needs by the patient.

If the dentist can encourage the patient to express his own specific educational needs, so much the better. The dentist's record of the patient's educational needs can prove invaluable to himself and his auxiliary personnel who aid him in patient education.

Now, what again is the second step in the educational process for both dentist and patient?

Recognizing needs.....*Page 40*
Expressing needs.....*Page 42*
Treating needs.....*Page 44*

YOUR ANSWER: The second step in the educational process for both dentist and patient is recognizing needs.

No, this is the *first* step, the step we've been discussing for the last few minutes. It is certainly necessary to recognize needs before any teaching or learning is attempted. The dentist tries to recognize those educational needs of his patient, then attempts to guide the patient toward recognizing his own needs. Of course this doesn't always work as well in practice as it does in theory, but it's worth a try!

But what is the second step—the one that follows recognition of needs? Return to page 39 and choose the correct answer.

YOUR ANSWER: Listening to Dr. Frank's monologue about prophylactic treatment is most likely to cause Grinston to want to learn about prophylaxis.

Educationally speaking, this is not the most likely reason. Of course, it is not possible to say exactly what finally convinces a person of a particular need.

You'll recall that we said a person tends to learn what he thinks he should know. Therefore, Grinston is more likely to learn about his need for education on periodic prophylaxis because he realizes the need, not because he is convinced by Dr. Frank's lecture. In addition, listening to a monologue gives Grinston little opportunity for participating in the educational process himself.

Now you should have no trouble selecting a better answer. Return to page 33 and try again.

YOUR ANSWER: The second step in the educational process for both dentist and patient is the expression of needs.

This is correct, of course. Pinpointing the needs by recording them and by talking about them clears up any vagueness or misunderstanding on the part of the patient. It also provides a specific starting point for the needed education.

Recognizing and expressing needs is not enough, though. The patient must want to do something about his needs and then act to satisfy them in order to learn. This is where motivation enters the educational process. Motivation is an essential factor in learning; it often determines what a person learns and how he learns it. The function of motivation is to arouse and maintain a person's interest long enough for him to satisfy his needs—or learn. In other words, motivation directs behavioral changes by stimulating a person to act on his needs.

Motivation performs three of the functions below. Choose the correct group.

Arouses interest, maintains interest, stimulates action.....Page 15
Arouses interest, satisfies needs, stimulates action.....Page 17
Arouses interest, maintains interest, satisfies needs.....Page 19

YOUR ANSWER: Yes, I think a patient can be forced to learn about dental health even if he feels no need for it.

Probably so—although this is not the most effective way of learning. You've no doubt been pressured into learning things which seemed meaningless to you at the time—things such as multiplication tables, history dates, or lists of spelling words.

Now please go ahead to page 18.

YOUR ANSWER: The second step in the educational process for both dentist and patient is treating needs.

No, we haven't mentioned this as a part of the educational process. The dentist will be treating his patient's dental needs, of course. So far, though, we have discussed only two steps in regard to the patient's dental education needs. If the first step is recognition of needs (by the dentist and by the patient), what has to be the second step?

Return to page 39 and select the correct answer.

YOUR ANSWER: Motivation arouses interest, maintains interest, and stimulates action.

Correct. A person is naturally motivated by the awareness of his own particular needs; this awareness we defined earlier as the driving force that prompts us to act. This force might well be called the "built-in" motivating influence, for it does stimulate a person to action. An aching tooth, for example, can be a much stronger motivating factor to visit the dentist than the six-month reminder that it's time for another examination. Since several needs may be functioning simultaneously, it is often difficult to discover just which need is providing the motivation for a particular action. The more often a dentist can pinpoint the needs that best motivate each patient, however, the easier his task as an educator will be. We are not implying that learning takes place *only* when a person is motivated by his own needs, but we *are* saying that a person tends to learn more quickly what is personally meaningful to him—and he should retain it longer.

With this in mind, do you think a patient can be forced to learn about dental health if he feels no need for it?

Yes.....*Page 43*
No.....*Page 46*

YOUR ANSWER: No, I don't think a patient can be forced to learn about dental health if he feels no need for it.

Well, just stop and think for a moment. Haven't you ever been pressured into learning things which seemed meaningless to you at the time? Multiplication tables? History dates? Lists of spelling words? It's most likely you have.

Now please go ahead to page 18.

YOUR ANSWER: Motivation arouses interest, satisfies needs, and stimulates action.

Sorry. Motivation is responsible for only two of the functions above. Let's find the one which is out of place.

We said, you'll recall, that motivation arouses a person's interest and maintains it long enough for him to satisfy his needs. Actually, motivation acts as a stimulus or an impetus to action. The satisfying of needs occurs *after* motivation has provided the incentive for acting. We hope you see that satisfying needs is not a function of motivation.

Now you'll have no trouble in selecting the correct answer. Return to page 42 and find it.

Artificial pressure to learn often results in rote memorization or forced learning with little consideration for individual needs. A person tends to learn more quickly that which meets his own needs and seems most meaningful to him.

This is where motivation comes in, for it plays a part in *any* type of learning situation. A patient may be motivated to learn about dental health by his own needs, whether they be physiological or psychological. If the patient's needs are not strong enough to provide sufficient motivation, the dentist may have to use an artificial type of motivation. This consists of stimulating interest by external means: rewards, prizes, gifts, or threats.

Let's look at three activities of the Grinstons for examples. Which Grinston youngster below is most likely motivated by a personal need?

Grindl writes an essay on oral hygiene for a local contest during National Children's Dental Health Week as an assignment for health class.....Page 50
Greg begins to brush his teeth every morning and evening to avoid his mother's constant reminders about it.....Page 52
Gary asks Dr. Frank for information on a mouth protector for use during football season.....Page 54

YOUR ANSWER: Motivation arouses interest, maintains interest, and satisfies needs.

Sorry. Motivation is responsible for only two of the functions above. Let's examine these functions more closely.

We said, you'll recall, that motivation arouses a person's interest and maintains it long enough for him to satisfy his needs. Actually, motivation acts as a stimulus or an impetus to action. The satisfying of needs occurs *after* motivation has provided the incentive for acting. We hope you see that satisfying needs is not a function of motivation.

Now you should have no difficulty in finding the correct answer. Return to page 42 and try again.

YOUR ANSWER: Grindl is most likely motivated by a personal need:

> **Grindl writes an essay on oral hygiene for a local contest during National Children's Dental Health Week as an assignment for health class.**

Probably not, since she is doing an assignment. Occasionally, a person will be trying to satisfy the need for approval or recognition, but most persons who enter contests are motivated by the promised rewards—prizes, money, medals—rather than by any inner need.

Such extraneous rewards promote interest and in many instances encourage real learning. This type of motivation is less desirable than the type which arises from individual needs, however, for often the person becomes interested only in how the activity will reward him, not in what he will learn from it. Grindl may well learn something about essay writing or oral hygiene, but she is being motivated by a required class assignment.

Now return to page 48 and select the Grinston who is motivated by a personal need.

YOUR ANSWER: Artificial motivation promotes real learning.

You're half right: Let's review those two types of motivation again:

1. Artificial: interest aroused and maintained artificially by the offer of rewards (prizes, grades, treats, special recognition) or by the threat of trouble (punishment, ridicule, criticism, force).
2. Built-in: interest stems from individual physical and social needs (hunger, pain, fear, curiosity, desire for approval, security, or knowledge) which require satisfaction.

Please notice that both types of motivation arouse interest. Effective learning can actually be promoted by either kind of motivation, for motivation is an essential part of the educational process.

Now please go ahead to page 56.

YOUR ANSWER: Greg is most likely motivated by a personal need:

> **Greg begins to brush his teeth every morning and evening to avoid his mother's constant reminders about it.**

No, Greg is obviously not brushing his teeth because it's a good habit or because he feels a need to practice good oral hygiene. He is being motivated by an external reason—his mother's reminders or threats.

Rewards or threats are often used to motivate interest in a learning activity. If used wisely, they can be quite effective in encouraging real learning. In many instances, though, the individual undertakes to learn only to gain the reward or to avoid the punishment. Chances are that once Greg's mother ceases her reminders about brushing, he may easily discontinue the "habit" he has been practicing. The artificial motivation is likely to produce a more temporary kind of learning, the kind that stops when the artificial stimulus is removed.

One of the other Grinston youngsters *is* being motivated by an inner need. Return to page 48 and choose the correct answer.

YOUR ANSWER: Built-in motivation promotes real learning.

You're half right! Let's review those two types of motivation again:

1. Artificial: interest aroused and maintained artificially by the offer of rewards (prizes, grades, treats, special recognition) or by the threat of trouble (punishment, ridicule, criticism, force).
2. Built-in: interest stems from individual physical and social needs (hunger, pain, fear, curiosity, desire for approval, security, or knowledge) which require satisfaction.

Please notice that both types of motivation arouse interest. Effective learning can actually be promoted by either kind of motivation, for motivation is an essential part of the educational process.

Now please go ahead to page 56.

YOUR ANSWER: Gary is most likely motivated by a personal need:

> **Gary asks Dr. Frank for information on a mouth protector for use during football season.**

Yes, Gary appears to be motivated by an inner desire (to play football and protect his teeth), not by some external stimulus such as an assignment or parental harassment. Individuals naturally tend to become interested in and learn more about things which promise to satisfy their own needs and purposes.

Please note that regardless of the type of motivation involved, each of the three Grinstons learned something: Gary and Grindl acquired new knowledge, Grindl probably gained some skill in essay writing, and Greg began to practice a commendable habit. Thus motivation, whether it be artificial or built in, is a fundamental part of the educational process.

Here for review are the two types of motivation we've mentioned:

1. Artificial: interest aroused and maintained artificially by the offer of rewards (prizes, grades, treats, special recognition) or by the threat of trouble (punishment, ridicule, criticism, force).
2. Built-in: interest stems from individual physical and social needs (hunger, pain, fear, curiosity, desire for approval, security, or knowledge) which require satisfaction.

Which of these two types of motivation promotes real learning?

Artificial ..... *Page 56*
Built-in ..... *Page 53*
Both ..... *Page 56*

YOUR ANSWER: Patients expect to be motivated.

Not necessarily. Those patients who have become dependent on motivation from prizes, praise, or penalties may expect the dentist to provide some similar kind of motivation. But this is not why it is important to recognize the value of motivation and make use of it.

Just being in a dental office is strong motivation for many persons. Their need, whether it is pain, fear, curiosity, desire for social approval, or whatever, has motivated them to pay the dentist a visit. Because of their genuine interest, the dentist has a more ideal teaching situation than most classroom teachers. His job will be to take advantage of the existing motivation and to capitalize upon it so his patients will want to learn as much as possible about dental health. In this way he can help create the desire for learning.

Return to page 59 and choose the correct answer.

YOUR ANSWER: Both artificial and built-in motivation promote real learning.

That's right. Motivation, the stimulus, may come from within or without.

In many cases, the motivation stemming from inner needs is likely to produce a more lasting type of learning, simply because interest tends to be sustained longer. It's much more difficult to provide a continuing kind of motivation with external means. Too many times the reward or threat of trouble becomes the main incentive for learning rather than merely acting as an interest inducer. Then the patient tends to become concerned only with the promised reward or punishment. In addition, he may become so dependent upon the external motivating factors that he finds it difficult to learn without them. Ideally, of course, the dentist should try to motivate learning by appealing to an inner need, such as the desire for health, good appearance, approval of friends, and self-respect.

Why should dentists be wary of overusing artificial motivation to promote interest in dental health?

This can too easily become the only reason for learning ..... *Page 58*
This isn't as strong as motivation resulting from needs ..... *Page 60*
This doesn't actually help the patient to learn ..... *Page 62*

YOUR ANSWER: Motivation techniques are popular in modern education.

While this may be true, it is not the reason the dentist should make use of motivation in teaching his patients about dental health.

Certainly modern educators make use of motivational techniques, just as generations of educators before them have done. The difference lies in the emphasis. Today's educators stress built-in motivation whereas yesterday's educators seem to have depended more exclusively upon artificial stimulation. Since both kinds of motivation can be effective, the dentist will no doubt use both in his teaching. But why?

Return to page 59 and choose the correct reason.

YOUR ANSWER: Artificial motivation can too easily become the only reason for learning.

That's right. And when this happens, learning is often temporary. *Interest may stop once the artificial stimulus is removed.* The dentist wants his patients to practice good dental health habits outside the office—habits which they learn because they see real purpose in doing so, not just for the dentist's approval or his offered rewards.

Since every learning situation is unique, each patient is bound to be helped or hindered by the motivation the dentist uses. He has an easier job than many classroom teachers, for most of his patients will visit his office well motivated toward learning about dental health. It may be

Please go on to the next page.

pain, fear, curiosity, a sense of duty, or any number of other factors which motivate them enough to make an appointment.

The dentist can't assume, however, that this motivation will be strong enough to sustain their interest long enough for them to learn. Therefore, it's up to him to capitalize on the existing interest in their dental problems by appealing to their inner needs. If this doesn't succeed, he may have to try positive artificial means—gifts, praise, and encouragement. Of course, he'll try to avoid negative means such as dire predictions, undue arousal of fear, ridicule, and such.

Why is it important for the dentist to utilize motivation in teaching his patients about dental health?

Patients expect to be motivated.....Page 55
Motivation techniques are popular in modern education.....Page 57
People rarely learn without some kind of motivation.....Page 61

YOUR ANSWER: Artificial motivation isn't as strong as motivation resulting from needs.

We haven't said anything yet about one kind of motivation being stronger than the other. In fact, rewards, grades, fear of punishment, and other artificial motivating factors are often stronger than any built-in-motivation could be. It depends upon the individual and the situation in which he is involved.

We did say, however, that artificial motivation is likely to produce a more temporary interest in learning. A person may learn only what he must in order to receive the reward or to avoid the problems. This doesn't always happen, of course, but it is more likely than if a person is motivated by some inner need.

Artificial motivation can be very effective, but often dentist and patient become too dependent on it. Why is this undesirable?

Return to page 56, read the material again, and choose the right reason.

YOUR ANSWER: People rarely learn without some kind of motivation.

Correct. People learn by responding to a need, which in turn provides the necessary stimulus for action.

Most dentists are quite conscious of motivational influences, but they sometimes forget that motivation should be tailored to the individual patient in order to be most effective.

Please go ahead to page 63.

YOUR ANSWER: Artificial motivation doesn't actually help the patient to learn.

Wait a minute! Grindl and Greg were motivated by factors not usually considered ideal, yet both certainly learned.

Let's do some reviewing. You'll recall that a person's needs may motivate him to learn. If his interest is aroused and maintained by means of an artificial stimulus such as a reward or a threat, we say he is artificially motivated. This kind of motivation can help him to learn, but his efforts may be sporadic and his learning shallow. In other words, he may learn only what he must in order to receive the reward or to avoid trouble.

It is easy for dentist and patient alike to rely on artificial methods of motivation to increase learning efforts. Why is this undesirable? Return to page 56, study the material again, and choose the correct answer.

For example, the entire Grinston family might have the same need for improved methods of oral hygiene. Dr. Frank might approach each member of the family in the following way:

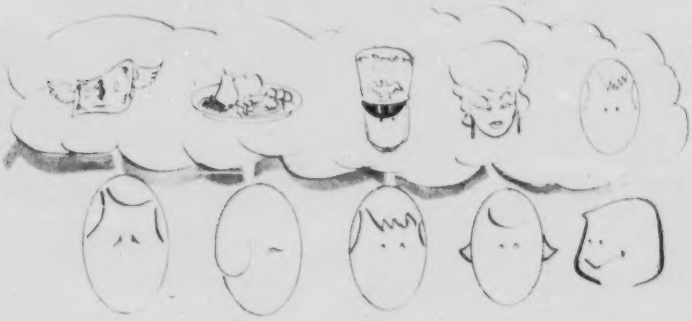
Mr. Grinston — finances: better oral health for himself and family means fewer trips to the dentist.

Mrs. Grinston — importance of diet and nutrition or prevention of periodontal disease.

Gary — necessity of good oral health to enter West Point.

Grindl — desire to have an attractive appearance.

Greg — desire to imitate his older brother.



What's likely to happen if Dr. Frank simply explains the necessity of good oral hygiene methods to each Grinston in the same way?

Each Grinston would be equally motivated by his need for improved dental health methods.....Page 64
Dr. Frank's teaching would be more effective, for he could use the same material and illustrations.....Page 66
Individual interest would be less likely to be aroused or sustained.....Page 68

YOUR ANSWER: Each Grinston would be equally motivated by his need for improved dental health techniques.

This would make teaching infinitely easier, but it just doesn't work this way. Let's think about motivation and how it operates once more.

We said that motivational techniques should be tailored to the individual patient. Of course people all have the same basic needs, but these needs vary greatly in degree and intensity. Even though the Grinstons have the same general problem—that of needing better oral hygiene methods—they are still individuals of various ages and interests. Therefore, in all probability, they wouldn't be *equally* motivated by the same explanation, no matter how carefully Dr. Frank prepared or delivered it. In fact, one or more of them might not be motivated at all. This can happen in any attempt to arouse interest.

There's a much better answer to our question. Return to page 63 and find it.

YOUR ANSWER: Goals should be set up as soon as the dentist recognizes his patient's needs.

The dentist may recognize a patient's needs before the patient is aware of them himself. If so, how can the patient immediately begin to cooperate in setting up goals based on his own recognized needs?

Actually, the process may go something like this:

1. Dentist recognizes patient's needs and records them.
2. Dentist helps patient discover and express his own needs.
3. Patient desires to do something about these needs.
4. Patient and dentist set up goals based on these needs.
5. Patient, with goals in mind, acts on his needs in order to change his behavior.

Now you should have no trouble in selecting the right answer. Return to page 68 and try again.

YOUR ANSWER: Dr. Frank's teaching would be more effective, for he could use the same material and illustrations.

Dr. Frank could use the same material, it's true, but this doesn't necessarily make his teaching more effective.

To be effective, the interest of each member of the Grinston family would have to be aroused and maintained long enough for each to learn how to improve his oral hygiene methods. Now just stop and think for a moment. Is the same material, presented in the same way, likely to be just as effective for 5-year-old Greg as for his father? Probably not. The difference in ages alone would make an identical presentation less effective.

We're sure you can select a better answer. Return to page 63 and try again.

YOUR ANSWER: Goals should be set up after the patient has decided to do something about his needs but before he acts.

Right. The goals then act as guides for any action the patient may take to satisfy his recognized needs.

The dentist should remember that the goals must be meaningful to his patient. If the goals are based upon the patient's recognized needs, they can often provide as much or more motivation than the needs themselves.

Here is the position of goals in the learning process:

How should the patient's goals be determined? On the basis of:

The dentist's diagnosis of his patient's needs.....*Page 69*
The patient's own recognized needs.....*Page 71*
The type of motivation used.....*Page 73*

YOUR ANSWER: Individual interest would be less likely to be aroused or sustained.

Right. Just the various ages of the Grinstons would create a problem for Dr. Frank if he tried motivating each in the same way. Without interest there would probably be very little learning accomplished.

To avoid this pitfall, the dentist takes still another step of the educational process into consideration—that of setting goals. Goals serve as specific ends toward which the patient can direct his actions to satisfy his needs. In addition, they serve as guidelines for the dentist's teaching. Setting goals together helps to insure that both dentist and patient will have a clear idea of where they are going and what they hope to achieve along the way.

All we are saying is that once the patient has recognized his need, has expressed it, and has a desire to satisfy it, he should have something definite toward which to work. And the period of time when a person is working toward a goal (or to satisfy his need) is the period in which learning takes place.

Where in the educational process do you think these goals should be set up?

As soon as the dentist recognizes his patient's needs.....Page 65
After the patient has decided to do something about his needs but before he acts...Page 67
After the patient has recognized his needs and has begun to do something about them.....Page 70

YOUR ANSWER: The patient's goals should be determined on the basis of the dentist's diagnosis of his patient's needs.

Not necessarily. The dentist's goals for treating the patient may well be determined by his examination of the patient's mouth and the subsequent diagnosis of his dental needs.

But what about the patient's goals? As an educator, the dentist will want to help him set specific goals toward which to work. (Remember, we said that the dentist and patient set goals together.) This doesn't mean imposing goals upon him.

The diagram merely shows what we have already said: a person acts to satisfy a need. Reaching a set goal may serve to satisfy the need. Or the goal may be one of a series of goals toward a particular need. In either case, the goal provides something definite toward which the patient may direct his actions.

Now you should have no difficulty in selecting the correct answer. Return to page 67 and try again.

YOUR ANSWER: Goals should be set up after the patient has recognized his needs and has begun to do something about them.

Goals provide the guidelines for action, not vice-versa. The patient who begins to act on his needs before he sets proper goals is like the long-distance runner who begins his course with no exact idea of where he should finish or how long his run should take.

Perhaps the following list will help you see exactly where the setting up of goals fits in:

1. Dentist recognizes patient's needs and records them.
2. Dentist helps patient discover and express his own needs.
3. Patient desires to do something about these needs.
4. Patient and dentist set up goals based on these needs.
5. Patient, with goals in mind, acts on his needs in order to change his behavior.

Now return to page 68 and choose the correct answer.

YOUR ANSWER: The patient's goals should be determined on the basis of his own recognized needs.

This is correct. Having recognized his needs, the patient is ready to set goals which direct him toward filling these needs. These goals, if meaningful, may act as motivating factors themselves.

Ten-year-old Grindl Grinston, for example, is at an age of high susceptibility to dental caries. Dr. Frank can help her set up meaningful goals toward which to direct her dental activities:

Need: To keep teeth as clean as possible.

Goals: To learn about toothbrushing techniques.
To learn when and how often to brush.
To learn about the control of sugar in the diet.

To make the goals meaningful to Grindl, perhaps Dr. Frank will stress the relationship of clean healthy teeth to an attractive appearance. At this time he will avoid talking about such things as the names of various instruments, how he operates dental equipment, or why X-rays are important.

In view of Grindl's need, which one of the following steps would take place *first?*

Acquiring new knowledge about good oral hygiene.....*Page 72*
Satisfying her recognized need for clean, healthy teeth.....*Page 74*
Setting specific goals based on her need....*Page 76*
Modifying her old habits of poor oral hygiene.....*Page 78*

YOUR ANSWER: Acquiring new knowledge about good oral hygiene would take place first.

No, the acquisition of new knowledge would be a final step ~~in~~ the learning process and would show that Grindl has learned.

Remember: learning occurs as a person attempts to satisfy his needs. Thus, a person acquires new knowledge because he feels the need to do so, consciously or unconsciously. The process through which he goes to satisfy this need is called the learning process, while the end result is the actual change in his fund of knowledge or ways of thinking and acting.

Grindl will reach this step as Dr. Frank teaches her about oral hygiene methods. However, he won't begin this teaching without some form of concrete direction. What provides this direction for him and for Grindl? Return to page 71 and choose the correct answer.

YOUR ANSWER: The patient's goals should be determined on the basis of the type of motivation used.

Not usually. If the dentist uses external motivation, the promised treat or behavior adopted to avoid trouble may well become the goal itself. Once this is attained, however, no further learning is likely to take place.

We're talking about goals for learning set up together by the dentist and the patient. In order for learning to take place, as the diagram illustrates, there must be a need, followed by some action to satisfy that need. The goal provides something definite toward which the patient may direct his actions. Motivation, you'll recall, merely acts to arouse and maintain interest until the need is satisfied. And, the goal itself may provide the necessary motivation.

Now return to page 67 and choose the correct answer.

YOUR ANSWER: Satisfying her recognized need for clean healthy teeth would take place first.

No, this is what a person actually does in the learning process.

Keep in mind that learning occurs as a person attempts to satisfy his needs, whether they are physical or social. The process through which he goes to satisfy these needs is called the learning process, while the end result is the change in knowledge or behavior.

We want you to decide what takes place after Grindl recognizes her need for keeping her teeth as clean as possible, but before she actually starts out to satisfy this need. Return to page 71 and choose the correct answer.

YOUR ANSWER: The attainment of immediate goals may often develop into the achievement of long-range goals.

Quite true. Setting up certain end goals gives overall direction to a patient's behavior, but he often needs intermediate goals to show him that he is on the right track.

Our goals are usually as complex and multiple as our needs. But our needs tend to become relatively fixed, whereas our goals are always changing. We acquire new goals when we have achieved old ones; we make changes in original goals when we can't attain them as they exist. Because of this flexibility, it is fairly easy to set goals which are geared to the ability of the patient to meet them. A goal which the patient cannot achieve will have no worthwhile value; it will only frustrate and discourage him. This in turn will be discouraging to the dentist.

Which list below best describes the kind of goals a dentist should try to set up with his patient?

Attractive, complex, flexible.....*Page 77*
Flexible, multiple, attainable.....*Page 80*
Attainable, meaningful, attractive.....*Page 82*

YOUR ANSWER: Setting specific goals based on her need would take place first.

Exactly. In order for the goals to be meaningful to Grindl, they must be more than attractive; they must also seem attainable. This brings us to the two main types of goals:

1. Long-range goals: over-all major goals to be achieved, such as improved oral health for the patient.
2. Short-range goals: more easily attained goals, such as learning about brushing—leading ultimately to improved oral health.

Short-range

Long-range

The short-range goals, being less remote, are sometimes more attractive to the patient.

Which statement below makes the best distinction between short-range and long-range goals?

The attainment of immediate goals may often develop into the achievement of long-range goals.....*Page 75*

One long-range goal is easier to achieve than a series of short-range goals.....*Page 79*

Long-range goals will provide more motivation because they tend to be more important goals.....*Page 81*

YOUR ANSWER: The following list best describes the kind of goals a dentist should try to set up with his patient: attractive, complex, flexible.

Let's take another look at that list. We'll agree with you that goals should be attractive. This provides motivation. But we haven't indicated that goals have to be either complex or flexible.

What we did say was that a person tends to have goals as complex as his needs. This means he may be working toward a number of individual goals or goals within goals at the same time in order to satisfy the various needs that are operating in his life. If complex dental health goals are consciously set up, however, the patient might become quite confused.

The element of flexibility enters the picture when a person alters his original goals for some reason. Setting up flexible goals isn't always possible or practical, especially in a dental situation. It's usually necessary to keep close to the goal of improved oral health, changing the steps that lead to this major goal if necessary.

You'll find another list a better one. Return to page 75 and select the correct list.

YOUR ANSWER: Modifying her old habits of poor oral hygiene would take place first.

No, the modification of old habits would be a final step in the learning process and would show that she had learned.

Remember that learning results in a change in a person's knowledge or in his actions. Furthermore, this learning occurs as a person attempts to satisfy his needs. A person modifies an old habit in response to a recognized need. The process through which he goes to satisfy this need is called the learning process, while the end result is the actual change in his behavior.

Grindl hopefully will begin to modify her habits of poor brushing or frequent consumption of candy bars in response to learning about good oral hygiene methods. But she should have some meaningful end toward which to work. This means she must first do what? Return to page 71 and choose the correct answer.

YOUR ANSWER: One long-range goal is easier to achieve than a series of short-range goals.

Not usually. We say this because most individuals go through a series of easier short-range goals in order to achieve the ultimate long-range goal.

Intermediate goals tend to provide direction for a person's activity toward a final, larger goal. Most dentists tend to think in terms of this final goal, such as improved oral health for the patient. The average patient, on the other hand, needs more readily accessible goals, such as learning the proper techniques of brushing and flossing and the necessity of prophylaxis. In other words, he needs to know what is immediately ahead of him, where he is going, and how he can help in the process of getting there. Achieving these sub-goals can then lead to the larger goal.

You should have no difficulty in finding the correct answer now. Return to page 76 and try again.

YOUR ANSWER: The following list best describes the kind of goals a dentist should try to set up with his patient: flexible, multiple, attainable.

Let's look at that list again. Of course goals should be attainable, but we didn't indicate they had to be flexible or multiple.

What we did say was that our goals tend naturally to be multiple, just as our needs are multiple. It might be quite confusing to a patient, however, to set up numerous goals at the same time. He might well be overwhelmed by the number alone, and the value of goal setting would be lost.

The element of flexibility enters the picture when a person alters his original goals for some reason. Setting up flexible goals isn't always possible or practical, especially in a dental situation.

Return to page 75 and select a better list.

YOUR ANSWER: Long-range goals will provide more motivation because they tend to be more important goals.

Let's stop and think this through. Long-range goals may well be larger than short-range goals, but this doesn't mean they will be more important to the patient. And, they tend to provide *less* motivation than the shorter, more attainable goals.

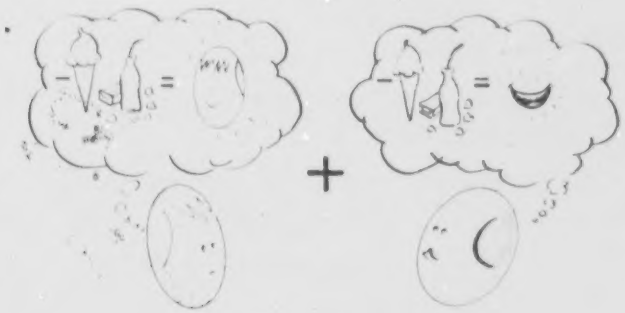
Long-range goals are usually more remote and often less attractive to an individual. Though the dentist tends to think in terms of long-range treatment plans and goals, such as total oral health, the average patient does not. He finds it easier to attain a series of smaller goals, such as learning first about the necessity for regular prophylaxis, then about proper brushing and flossing techniques, and finally about the effect of diet on tooth decay. Achieving these smaller goals leads to the ultimate goal, that of improved oral health.

We hope you understand now why these smaller steps provide more motivation than would the over-all goal of improved oral health. Please return to page 76 and choose a better answer.

YOUR ANSWER: The following list best describes the kind of goals a dentist should try to set up with his patient: attainable, meaningful, attractive.

Right. And gearing goals to the ability of each patient will aid in producing such goals.

If the dentist is alert to capitalizing on the patient's goals in other areas, unrelated though they may be to dental health, he should have more success in helping the patient set up dental health goals. For example, 16-year-old Gary Grinston may avoid eating chocolate to reduce his skin problems. Encouragement in this action, for which Gary already has a strong motivation, can aid Dr. Frank in steering him toward dental health goals as well.



What are we saying the dentist's responsibility is in this step of the educational process?

To set meaningful goals for his patient...Page 84
To help the patient decide which goals to pursue.....Page 86
To give the patient a choice of several possible goals.....Page 88

YOUR ANSWER: Mrs. Grinston's activity is directed toward understanding how X-rays aid in diagnosis.

Mrs. Grinston may acquire this understanding along the way, but this is not her goal.

Remember, we said that Dr. Frank helped Mrs. Grinston set up a goal toward which to direct her activity. If Mrs. Grinston participates actively—whether it be mentally, emotionally, or physically—while Dr. Frank is doing his teaching about X-rays, she should have no difficulty in attaining her goal. But if she's daydreaming about her afternoon bridge game, she is likely to gain little from Dr. Frank's teaching.

Now do you remember what goal was set up? Return to page 85, reread the example, and choose a better answer.

YOUR ANSWER: The dentist's responsibility is to set meaningful goals for his patient.

Wait a minute. We didn't say the dentist is to set goals *for* his patient. Substitute the word *with* and you'll have a correct statement.

Imposing goals upon an individual may work occasionally, but it's not a sound educational technique. A person is more likely to work toward a goal when he personally adopts that goal than when he is being pushed toward it by a person in authority. And how many times do we feel our own goals to be unimportant?

Of course it is necessary for the dentist to give some guidance in the area of dental health in order to help the patient recognize what goals might be suitable. This doesn't mean the dentist should actually set the goals himself.

Please return to page 82 and choose a better answer.

YOUR ANSWER: Activity is an essential step in the learning process.

Right. But his activity doesn't necessarily help him learn any faster, nor does it provide motivation.

Since a patient must participate actively in his learning, it is important that his attention be focused on his goals and that he be aware of appropriate kinds of activity to reach them.

Here's an example: Dr. Frank prepares to take several bitewing X-rays before treating Mrs. Grinston. She objects, saying she hasn't needed them for previous dental treatment. Through conversation and questioning, Dr. Frank helps Mrs. Grinston discover that her objections stem from fear of exposure to X-rays. They set up an educational goal: to alleviate this fear.

Now Dr. Frank can begin his teaching by instruction, explanation, or demonstration. Mrs. Grinston may participate by listening, asking questions, looking at exposed films, and following his directions.

Toward what is Mrs. Grinston's activity directed?

Understanding how X-rays aid in diagnosis.....*Page 83*
Accepting an initial X-ray survey.....*Page 87*
Overcoming her fear.....*Page 90*

YOUR ANSWER: The dentist's responsibility is to help the patient decide which goals to pursue.

Yes, the dentist should work *with* his patient in setting up meaningful, attainable, and suitable goals based on recognized needs.

Up to this point the educational process seems to have progressed very smoothly. The dentist has recognized and recorded his patient's educational needs, helped his patient to discover and express his own needs, and aided his patient in setting up suitable goals. But, all this will be in vain if the patient doesn't act to achieve his goals.

Action is necessary to learning. Our definition of learning, you'll recall, states that learning results from acting to satisfy needs. Or we can say that learning results from acting to achieve goals. The point we're making is that some kind of activity—mental, emotional, physical—is necessary to insure effective learning.

And why is activity necessary?

Activity is an essential step in the learning process.....Page 85
Activity helps us learn faster and more thoroughly.....Page 89
Activity provides the motivation needed to achieve goals.....Page 91

YOUR ANSWER: Mrs. Grinston's activity is directed toward accepting an initial X-ray survey.

This is not Mrs. Grinston's goal, although this acceptance may well come about as a result of reaching the goal set up by Dr. Frank and his patient.

A person must take action to pursue his goals if he is to satisfy his needs or learn. If Mrs. Grinston participates actively—mentally, emotionally, or physically—while Dr. Frank is teaching her about X-rays, she should have no difficulty in attaining her goal. But, if she's daydreaming about her afternoon bridge game, she is likely to gain little from Dr. Frank's teaching, and incidentally, will tend to retain her fear of X-rays.

Return to page 85, reread the example, and choose another answer.

YOUR ANSWER: The dentist's responsibility is to give the patient a choice of several possible goals.

This isn't the dentist's *main* responsibility in the area of goal setting.

Choosing a goal that someone else suggests may appeal to a few people. A person is much more likely to work toward a goal of his own choosing, however, for he tends to consider his personal goals to be important. The dentist helps the patient to recognize what goals might be suitable in the area of dental health. Then together they set up goals based on the particular needs of that patient. In doing this the dentist might well suggest possible goals, or even better, lead the patient through conversation and questioning to think of these goals himself.

Return to page 82 and choose the correct answer.

YOUR ANSWER : Activity helps us learn faster and more thoroughly.

Learning can result from acting (whether mentally, emotionally, or physically) to achieve a goal. But we didn't say anything about the learning being faster or more thorough.

Some kinds of activity will aid in faster, more thorough learning than other kinds of activity, it's true. But you're missing the point of what we said about action. Take another look at this diagram we gave you earlier. Perhaps this will help you place activity within the total framework of the educational process:

Return to page 86 and choose another answer.

YOUR ANSWER: Mrs. Grinston's activity is directed toward overcoming her fear.

Exactly. This was Mrs. Grinston's specific goal. Of course she may well learn how X-rays aid in diagnosis as a result of working toward this goal. Also, after achieving the goal she will be more likely to agree to the bitewings.

The dentist plays an important part in helping each patient move toward goals they have set together. Here are several of the ways in which he may provide this aid:

AIDS THE DENTIST CAN PROVIDE

1. Give necessary information

Answering questions

3. Performing demonstrations

Helping to keep goals in focus

5. Encouraging the patient to act

6. Motivate the patient when necessary

Suppose the dentist carefully follows the steps of the educational process which we've discussed thus far, using the methods listed above to aid him in his teaching. Can he be certain that his patients will learn?

Yes.....*Page 92*
No.....*Page 91*

YOUR ANSWER: Activity provides the motivation needed to achieve goals.

We said that there was little danger of inaction if needs or goals provide strong enough motivation, but we said nothing about activity itself providing the motivation.

Motivation to satisfy needs or achieve goals stems from the needs or the goals themselves. Or it can come from the artificial methods often used to spur a person on toward a goal. Let's look at the diagram we gave you earlier:

This cycle shows that a need can motivate a person to act to achieve a goal which in turn satisfies the need. Now you should have no difficulty in finding the correct answer. Return to page 86 and try again.

YOUR ANSWER: Yes, the dentist can be certain that his patients will learn.

This would be fine if it really happened, but unfortunately, learning is not assured by doing all the "right" things as far as educational theory is concerned. However, most patients will learn something most of the time; how long they will retain it is a different matter.

Now please go ahead to page 94.

YOUR ANSWER: Repetition and review aid in reinforcing learning by making the material more meaningful to the patient.

Not necessarily. Merely repeating or reviewing material doesn't make it particularly more meaningful. But if the material is meaningful in the first place, it is more likely to be remembered.

Let's think about the dentist who likes to have his patients learn the name of each tooth. He teaches by using a diagram of the teeth with proper descriptions and by having each patient repeat the names until he has them memorized.

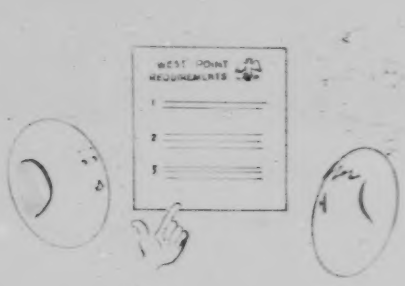
Since this specific material would probably have little meaning for most patients, repetition wouldn't aid much in reinforcing the learning. Nor would a review during a future visit be of much help. In fact, a good many patients would have a high rate of forgetting!

Return to page 94 and choose a better answer.

YOUR ANSWER: No, the dentist cannot be certain that his patients will learn.

True. However, most patients will learn something most of the time; how long they will retain it is a different matter.

We naturally tend to forget a great deal of what we learn and at a discouragingly rapid rate. To combat this inevitable problem, we sometimes try to *reinforce* learning by repetition and review.



In many instances repetition and review are valuable in the educational process. The dentist should encourage his patients to "practice" new dental habits or new ways of thinking about dental health. Such review at home and in the dental office will often help patients retain their learning for longer periods of time.

How do repetition and review aid in reinforcing learning?

By making the material more meaningful to the patient ..... *Page 93*
By helping the patient remember more of the material ..... *Page 96*
By eliminating the problem of forgetting .. *Page 98*

YOUR ANSWER: Dr. A is doing the most effective job of reinforcing learning.

Are you sure? Let's look at the example again:

> Dr. A asks Jasper to repeat the parts of a tooth which he memorized for the dentist on the last visit.

We'll repeat a statement we just made in our previous discussion of repetition and review:

"Review is more effective than mere repetition." Merely asking Jasper to list the parts of a tooth is not nearly as effective as relating this learning to a new situation. (In all probability, he won't be able to remember them anyway. Few dentists have patients with quiz-show intelligence!)

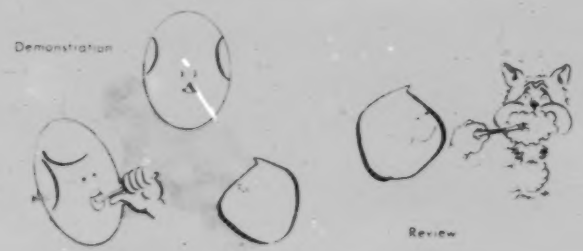
To provide reinforcement, Dr. A could review the parts of a tooth while talking about the functions of teeth, while explaining why any break in the enamel must be repaired, or while discussing why some people require more dental treatment than others.

Return to page 96 and select a better answer.

YOUR ANSWER: Repetition and review aid in reinforcing learning by helping the patient remember more of the material.

Yes. Reinforcement aids in retention of learning.

Good review includes the reteaching of old material in order to gain new understanding or to clarify original learning. In this way review is more effective than mere repetition; review adds new dimensions or concepts as it reconsiders what has already been learned. In addition, review can help to correct misconceptions gained in the original learning.



Which dentist below is doing the most effective job of reinforcing learning?

Dr. A asks Jasper to repeat the parts of the tooth he memorized for the dentist on the last visit.....Page 95
Dr. B explains the function of the dental engine's burs and suction apparatus to Oscar, a new patient.....Page 99
Dr. C shows Hortense the proper brushing technique on a model and asks her to demonstrate it in her own mouth.....Page 101

YOUR ANSWER: Evaluation is important for it reinforces learning by indicating where the dentist's teaching has been weak.

We said that evaluation may help a dentist judge the adequacy of his teaching, which certainly may show where it has been weak. But how does this reinforce learning?

We've been talking about the patient as the learner, you'll recall, and the dentist as the teacher. Naturally the dentist may be learning as he teaches; if so, evaluation might reinforce *his* learning. However, the patient's learning will hardly be reinforced by indications of the dentist's weaknesses in teaching.

Now evaluation itself *can* be an effective tool for reinforcing learning if used carefully. For example, it is difficult to conduct a good review without first evaluating what has already been learned. Both evaluation and review should be continuous practices and consequently will often go hand-in-hand.

Please return to page 101 and choose a better answer.

YOUR ANSWER: Repetition and review aid in reinforcing learning by eliminating the problem of forgetting.

We didn't say anything about repetition and review solving the forgetting problem. In fact, we said this was an *inevitable* problem.

What we did say was that reinforcing learning by using the processes of repetition and review helps to combat forgetting. Learning is retained for a longer period of time when it is reviewed carefully. This review may consist of simply repeating the material or of presenting the material in a new way. The meaningfulness of the material learned or the degree of learning both affect the rate of forgetting also. The more thorough and satisfactory the learning, the less rapid the forgetting is likely to be.

However, having a patient repeat something which has little meaning, such as names of various dental instruments, is a waste of time. He will probably forget the names almost as soon as he leaves the office, if not before!

Now return to page 94 and select the correct answer.

YOUR ANSWER: Dr. B is doing the most effective job of reinforcing learning.

Let's look at the example again:

> Dr. B explains the functions of the dental engine's burs and suction apparatus to Oscar, a new patient.

The words "a new patient" tell you immediately that Dr. B is doing some new teaching, not reinforcing previously learned material by review. When Dr. B finished his explanation, he could have asked Oscar if he had any questions. In answering Oscar's questions then, the dentist could review what he had already told him about the dental engine, perhaps adding some new material or clearing up any misconceptions from the first round.

We hope you see the difference now between teaching new material and reinforcing what has already been learned. Return to page 96 and choose another answer.

YOUR ANSWER: A dentist might base his evaluations on what the patient says he has learned.

This would be a rather risky kind of evaluating. What a person *says* he has learned and what he has actually learned may well be two entirely different things!

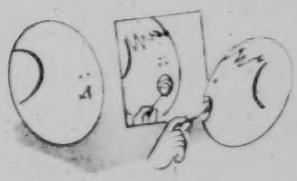
For example, the patient who maintains that he has learned the importance of gum massage but whose gingiva is inflamed on several successive visits may be saying one thing but doing another. The dentist could capitalize on this opportunity for further teaching or for some reteaching.

Evaluation should indicate what actually has been learned, not what the dentist hopes the patient has learned or what the patient himself merely says he has learned.

Return to page 102 and select another answer.

YOUR ANSWER: Dr. C is doing the most effective job of reinforcing learning.

Right. He asked his patient to demonstrate what she had just learned about brushing, thereby fixing the proper technique more firmly in her mind.



The next step in the educational process—evaluation—can aid in careful, systematic review. Evaluation is an integral part of any learning situation, for it is the process by which dentist and patient judge whether or not goals are being attained. Here are several functions of evaluation:

1. Helps the patient see what he has actually learned.
2. Gives the patient satisfaction if he's doing a good job.
3. Regulates motivation by providing encouragement for progress or by showing the difference between performance and goals.
4. Helps the dentist judge the adequacy of his teaching.
5. Helps to clarify or redefine goals.

We'll be discussing each of these functions shortly, but first—a question. Why is evaluation so important?

It reinforces learning by indicating where the dentist's teaching has been weak.....Page 97
It shows if goals have actually been achieved.....Page 102
It measures the effect of motivation on the educational process.....Page 104

YOUR ANSWER: Evaluation is important for it shows if goals have actually been achieved.

Exactly. And this in turn indicates to the dentist and his patient just what has been learned.

In other words, evaluation shows how successful the educational process has been. This is important to the dentist since he will usually be the one who guides the evaluating. He can base his own evaluations on such things as examining the patient's mouth, checking progress records, comparing oral conditions from check-up to check-up, or conversing with the patient. It might be helpful to record the patient's educational progress just as much as to note his treatment progress.

The dentist's judgments of what the patient has achieved as a result of the learning situations can then help him to guide the patient in the evaluation process.

On what evidence below might a dentist base his evaluations?

On what the patient says he has learned..Page 100
On how successfully the patient practices what he has learned.....Page 105
On how quickly the patient learned the material taught.....Page 107

YOUR ANSWER: The following method might be the best evaluation of Mrs. Grinston's learning:

Her satisfaction at having found the answer to her breath odor problem.

Probably not. This satisfaction may well be a byproduct of her learning about materia alba, but it is hardly a good evaluation of what she has actually learned.

Remember, when a person has learned, he puts his learning into practice. This observable practice can then serve as a basis for evaluation, showing how far a patient has gone toward reaching his goal. Stopping to evaluate progress on the way to a goal can provide motivation for continuing.

Now return to page 105 and choose a better answer.

YOUR ANSWER: Evaluation is important for it measures the effect of motivation on the educational process.

This was not one of the functions of evaluation which we gave you. Here is the list again:

1. Helps the patient see what he has actually learned.
2. Gives the patient satisfaction if he's doing a good job.
3. Regulates motivation by providing encouragement for progress or by showing the difference between performance and goals.

   (This is the only place we mentioned motivation in relation to evaluation.)
4. Helps the dentist judge the adequacy of his teaching.
5. Helps to clarify or redefine goals.

Notice that evaluation helps both dentist and patient. Since the evaluating process shows what the patient has learned, it also indicates whether or not the patient has attained his goals. This is helpful to the patient as well as to the dentist.

Return to page 101 and choose a better answer.

YOUR ANSWER: A dentist might base his evaluations on how successfully the patient practices what he has learned.

Right. Successful practice is a good test of learning achievement, particularly in the area of dental health. Basing evaluation on this kind of evidence is much safer than depending on what the patient *says* he has learned.

It is important that the patient himself be aware of his progress. Frequent evaluation will help him see what he has actually learned and where he still needs to keep working. Also, it provides a certain amount of satisfaction when all is going well. This in turn provides motivation in the form of encouragement toward further progress.

Although the dentist may find it easier to do all the evaluating himself, he should keep in mind that the patient needs to share in the process. This might be accomplished through discussion, by having the patient keep a daily progress chart, or by pointing out the improvements of mouth condition to the patient.

If Dr. Frank taught Mrs. Grinston about materia alba and how to control its accumulation, which method below might be the best evaluation of her learning?

Her satisfaction at having found the answer to her breath odor problem.....Page 103
Her interest in the topic, exhibited by the numerous questions she asked.....Page 106
The absence of materia alba in her mouth on successive visits.....Page 108

YOUR ANSWER: The following method might be the best evaluation of Mrs. Grinston's learning:

Her interest in the topic, exhibited by the numerous questions she asked.

An expression of interest doesn't necessarily denote learning and thus does not provide a sound basis for evaluation.

Mrs. Grinston, for example, might have asked a great number of questions in order to appear intelligent and alert to Dr. Frank. Unless she puts her learning into practice by doing something to control her accumulation of materia alba, she probably won't learn much. Merely asking questions won't help a person who doesn't follow through on the answers.

One way Dr. Frank could have been sure Mrs. Grinston was learning as he answered her questions was to do some evaluating as the conversation progressed. He might have asked *her* a few questions just to see how much she was actually absorbing.

There's a better way that both Dr. Frank and Mrs. Grinston can evaluate her learning, however. Return to page 105 and find it.

YOUR ANSWER: A dentist might base his evaluations on how quickly the patient learned the material taught.

Quickness or ease of learning usually doesn't provide a sound basis for evaluating what has actually been learned.

We suggest basing evaluation on such things as actual examination of the patient's mouth, conversation with the patient about the areas of dental health covered in the teaching, or comparisons of oral conditions from visit to visit. Keeping a close check on the patient's progress record, as well as noting his educational progress can be additional aids to the dentist as he attempts to evaluate what the patient has learned.

Return to page 102 and choose the correct answer.

YOUR ANSWER: The following method might be the best evaluation of Mrs. Grinston's learning:

The absence of materia alba in her mouth on successive visits.

Correct. Both Dr. Frank and Mrs. Grinston could see that she had applied her learning by brushing thoroughly immediately after eating and by eating detergent foods.

Now if Mrs. Grinston had returned with materia alba still in evidence, Dr. Frank might well stop to evaluate his own teaching effectiveness. This is another important function of evaluation, you'll recall, helping the dentist to judge the adequacy of his own teaching.

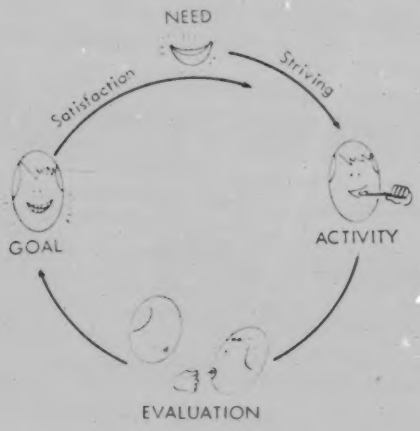
Occasionally, no matter how hard the dentist may try, there will be no results. Teachers in every field have this experience. He shouldn't be discouraged by this, for it is certain to happen; rather, he should continue to evaluate his own teaching for improvements.

According to the discussion above, why should the dentist make use of personal evaluation of his teaching?

To determine how effective his teaching has been.....Page 110
To judge how much he has learned about teaching.....Page 112
To decide what new material he should teach .....Page 114
To measure what his patients have learned about dental helath.....Page 116

Careful evaluation by dentist and patient may also help to clarify or define goals. If an original goal has not been achieved, it is wise to try other methods aimed at reaching that goal.

Here is the circle of learning that we showed you earlier.



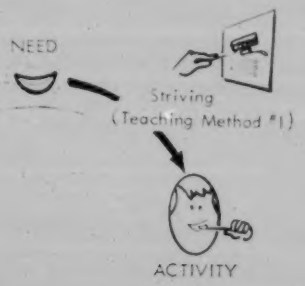
Now please go ahead to page 111.

YOUR ANSWER: The dentist should make use of personal evaluation of his teaching to determine how effective his teaching has been.

Right. Evaluation may certainly be used for the other three reasons as well, but we were emphasizing the dentist's own measurement of his teaching.

Now please continue by turning back to page 109.

Here is the first part of the circle. The need is for clean, healthy teeth, and Dr. Frank's first teaching method involves the use of a picture to show the correct method of toothbrushing.



In this case, toothbrushing is the desired _____.

Check your answer on page 113.

YOUR ANSWER: The dentist should make use of personal evaluation of his teaching to judge how much he has learned about teaching.

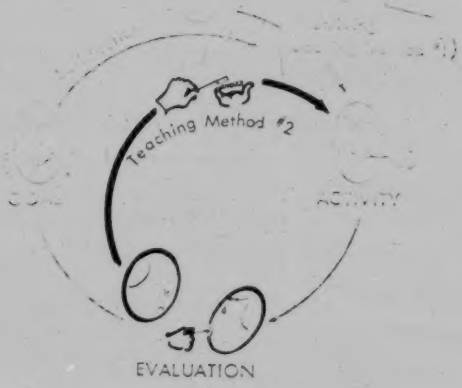
Although this may well be a byproduct of evaluation, this is not what we had in mind when we asked the question.

Our discussion, you'll recall, centered on the dentist's use of evaluation to judge the effectiveness of his teaching methods, not on what he might have learned about teaching. Since evaluation should be a continuous process, the dentist will probably be carrying on two kinds of evaluation simultaneously—evaluating what his patient has learned and how effective he was in teaching the patient. This is in addition, of course, to all the evaluating the dentist does as a practitioner.

We hope you see how important evaluation can be to the dentist. Now return to page 108 and choose the correct answer.

In this case, toothbrushing is the desired *activity*.

Here is some more of the circle of learning. Dr. Frank evaluates his teaching efforts and finds that further teaching needs to be done. So he goes on to another teaching method, this time demonstrating proper toothbrushing with a brush and model.



Now please go ahead to page 115.

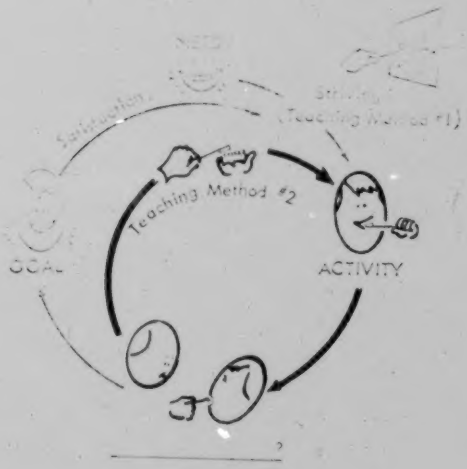
YOUR ANSWER: The dentist should make use of personal evaluation of his teaching to decide what new material he should teach.

This might certainly be a useful function of evaluation, but the word *personal* denotes a particular type of evaluation.

Our discussion, you'll recall, centered on the dentist's use of evaluation to make decisions about his teaching, particularly in the area of affecting his patients' progress. The material he chooses to teach may well be the result of some sort of evaluation, but we've been talking about how the dentist uses the material or how he presents it to the patient. This determines its effectiveness in most cases. Honest evaluating will help the dentist to improve his own teaching effectiveness considerably.

Return to page 108 now and choose another answer.

After teaching method #2, Mr. Grinston again practices the desired activity. He then returns to Dr. Frank for _____.



Please check your answer on page 117.

YOUR ANSWER: The dentist should make use of personal evaluation of his teaching to measure what his patients have learned about dental health.

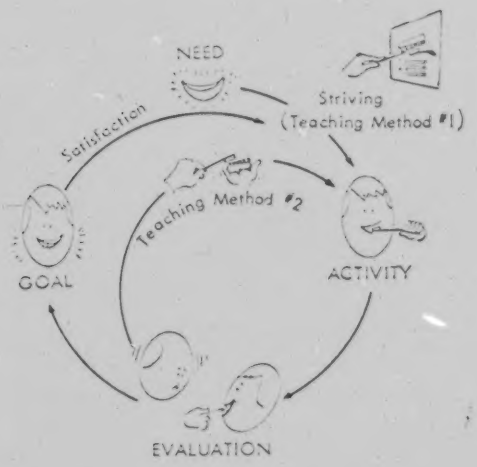
Of course the dentist evaluates what his patients have learned, but this is not what we had in mind when we used the term *personal* evaluation.

Our discussion centered on the dentist himself and how he might use evaluation techniques to judge his own teaching. This is just as important a function of evaluation as judging what the patient has learned. In a way the dentist's honest appraisal of himself as a teacher can well determine what the patient will learn in the future. As we know from experience, a cool-eyed evaluation of one's past efforts is often the first step toward future improvements.

We're sure you will have little difficulty in selecting the correct answer now. Please return to page 108 and try again.

After learning and practice, Mr. Grinston returns to Dr. Frank for *evaluation.*

This time Mr. Grinston exhibits a clean set of teeth, and he has the satisfaction of having achieved his original goal.



Now please continue on page 118.

If the original goal has been achieved, the educational experience may be considered complete. Or, as frequently happens, the achievement of one goal may lead to the setting up of additional goals.

We hope you can see how important this step of evaluation is to the educational process. It can actually be used with each of the other steps from recognizing needs to reinforcing changes. In addition, evaluation provides direction for both dentist and patient as they proceed through the educational process.

Let's take a quick review of these steps.

Please go to the next page.

Summary

The following summary can help you reinforce your own learning about the steps in the educational process before you tackle a test over the same material. Keep in mind that each learning situation won't follow these steps in exact sequence (for example, steps 3 and 4 are often reversed), but most situations will include all seven of the steps in some form. Try to recall the discussion on each step as you review.

Step 1—*Recognizing needs:* dentist recognizes educational needs as he checks for treatment needs; helps patient to recognize own needs.

Step 2—*Expressing needs:* dentist records educational needs and helps patient to state his own needs.

Step 3—*Stimulating motivation:* motivation arouses and maintains interest; dentist may appeal to inner needs or use artificial stimuli.

Step 4—*Setting goals:* may be short-range or long-range guides to activity; must be meaningful, attractive, attainable; can provide motivation; should be based on needs.

Step 5—*Acting to achieve goals:* activity is necessary to learning; activity should be directed toward specific goals.

Step 6—*Reinforcing learning:* review and repetition aid in retention of learning.

Step 7—*Evaluating results:* aids in judging what patient has learned and how effective the dentist's teaching has been; clarifies or defines goals.

Now go ahead to page 120 to begin a short test over these seven steps in the educational process.

Review Test

Carefully read the statements in each of the following groups. Pick out the one *false* statement in each group; then jot down the answer letters on a piece of paper. When you have completed the test, you may check your answers on page 122.

1. Pick out the one *false* statement:

   A. Needs are driving forces that prompt a person to act.

   B. Learning takes place between the arousal of need and the setting of goals.

   C. The process of learning is continual and multiple.

   D. Learning occurs as a person attempts to satisfy his needs.

2. Pick out the one *false* statement:

   A. All needs are conscious.

   B. Telling a person what he needs may convince him that a behavior change is desirable.

   C. Expressing needs helps to pinpoint them for dentist and patient.

   D. Recording educational needs can be as important as recording treatment needs.

Please go to the next page.

3. Pick out the one *false* statement:

   A. Goals should be set by the dentist.

   B. Motivation stimulates a person to act on his needs.

   C. Motivation is a fundamental part of every learning situation.

   D. Motivation may be artificial or built-in.

4. Pick out the one *false* statement:

   A. Needs may provide motivation.

   B. Goals may provide motivation.

   C. Learning takes place only when a person is motivated by his needs.

   D. Patients rarely learn without some kind of motivation.

5. Pick out the one *false* statement:

   A. Motivation arouses and maintains interest.

   B. Short-range goals are less remote and more easily attained.

   C. Long-range goals are usually more attractive to the patient.

   D. Goals should be attractive and attainable in order to be meaningful.

Please go to the next page.

6. Pick out the one *false* statement:

   A. Goal-directed activity is necessary to learning.
   B. Repetition and review aid in the retention of learning.
   C. Reinforcement of learning reduces the problem of forgetting.
   D. Careful attention to educational theory assures learning.

7. Pick out the one *false* statement:

   A. Evaluation determines whether goals are being attained.
   B. Effective teaching can be determined by evaluation.
   C. Evaluation shows how successful the educational process has been.
   D. Evaluating should be done solely by the dentist.

ANSWERS:
1. B, 2. A, 3. A, 4. C,
5. C, 6. D, 7. D, If
you missed more than
one, you should review
the summary on page 119.

Section II

Now that we have an idea of the steps included within the educational process, we're ready to examine the various factors which constantly influence it. First we'll consider those factors relating to the patient's capacity to learn.

Since each patient is a unique entity, it becomes extremely important for the dentist to be aware that individual differences do exist and that these differences strongly affect the patient's learning capacity. An obvious difference, for example, is that of age. The dentist would teach a child differently from an adult, or a young woman differently from a middle-aged man, though he might be discussing the same subject with each. Even patients of the same age will differ a great deal physically, mentally, emotionally, and socially and will naturally vary in their reactions, interests, and abilities.

Please go to the next page.

The following factors are some that influence learning on any age level: physical and emotional well-being, temperament, interests, attitude toward learning, sex, racial or national origin, home environment, economic level, and past experiences. We can't adequately cover this entire list of factors, so we'll concentrate on those particularly important for the dentist to recognize.

Why is it important for the dentist to be aware of individual differences?

They make people respond in unpredictable ways.....*Page 126*
They increase a patient's capacity to learn.....*Page 128*
They influence learning.....*Page 130*

YOUR ANSWER: Home background influences learning by providing identical environments for each member of the family.

Home background certainly does have a great influence on learning, but not for the reason given above.

We said, you'll recall, that the home environment is *not* identical for every member of a family. The physical surroundings may often be the same, but the psychological circumstances differ greatly. Different personalities account for a lot of the variety. We have all known of families that produced a distinguished doctor—and a "distinguished" black sheep as well! Then too, a family's needs, economic level, and general social circumstances frequently change over a long period of time. Children of various ages will then grow up under very different home conditions.

Please return to page 130 and choose a correct statement.

YOUR ANSWER: It is important for the dentist to be aware of individual differences, for they make people respond in unpredictable ways.

That they may do, but this isn't the main reason that the dentist should recognize the various factors.

This answer actually echoes the question. We could ask:

> Why is it important for the dentist to be aware that people are different?

and still expect you to choose another answer. Thinking about these factors and their relationship to any person's capacity to learn might help you. But we should keep in mind that each patient, even those of the same age and sex, will differ greatly in a number of areas, all of which seem to affect learning!

Now return to page 124 and choose a better answer.

YOUR ANSWER: Environmental conditions affect the way a person behaves as well as what and how he learns.

Right. The term *environment* encompasses a host of other influences, all of which help to determine a person's present behavior and his learning potential.

Because environment exerts such influence upon learning, it will naturally affect the attitude each patient has toward oral health. This is particularly true because most health habits are deeply rooted within a culture, and people usually react in terms of their culture (customs, skills, ideas, values).

For example, people in lower economic and social groups tend to neglect their teeth, partly because of low income and partly because the idea of preventive care is so foreign to their culture. Patients from some cultural backgrounds consider retention of teeth unimportant or may even prefer dentures. On the other hand, patients who are a part of a cultural group that values general good health and a good appearance as well will tend to have more favorable attitudes toward oral health.

Please go ahead to page 132.

YOUR ANSWER: It is important for the dentist to be aware of individual differences, for they increase a patient's capacity to learn.

Are you guessing? We said these various factors have an influence on a patient's learning capacity, but we did not say they *increased* this capacity.

In fact, many of the factors we mentioned might just as easily *decrease* learning capacity. For example, the patient with physical ailments may well be difficult to interest in learning about dental health. His capacity for learning will be impaired if his mind is occupied by his physical problems. The dentist will have to take this into consideration as he attempts to teach. Otherwise, he is likely to become frustrated by the lack of patient response to his most skillful efforts!

Return to page 124 and try another answer.

YOUR ANSWER: The terms "environment" and "home background" can be used interchangeably, for both exert influence upon a person's learning.

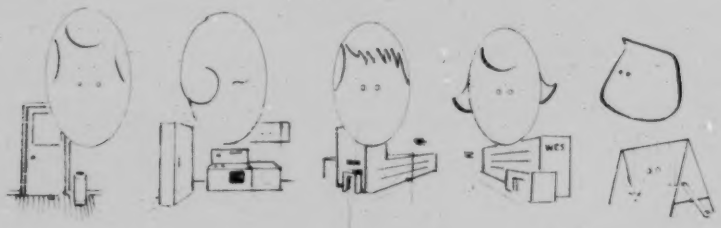
You'll run into difficulty if you regard these terms as synonymous because *environment* is a much broader term than *home background.*

A person's total environment includes his home and family influences, plus any outside influences exercised by his school, friends, church, clubs, and neighborhood. The home still remains the most important part of the average person's environment, however, since it tends to shape attitudes and fundamental approaches to life, behavior tendencies, and personality growth.

If you use the term *home environment*, you would be safer, for that differentiates it from other environment. Of course all environment exerts influence upon a person's learning. And that should give you a clue to the correct statement. Return to page 130 and find it.

YOUR ANSWER: It is important for the dentist to be aware of individual differences, for they influence learning.

Correct. A person's environment influences his present behavior, his physical, mental, emotional, and social development, and his learning potential. The patients who appear in the dental office have been shaped by a number of conditions we lump together as *environment.*



Interestingly enough, members of the same family tend to experience different environments. Their temperaments vary, making them react differently and causing others to regard them differently. In addition, persons naturally respond differently to the same environmental circumstances due to various psychological conditions at work on them.

Choose the correct statement below:

Home background influences learning by providing identical environments for each member of the family ..... *Page 125*

Environmental conditions affect the way a person behaves as well as what and how he learns ..... *Page 127*

The terms "environment" and "home background" can be used interchangeably, for both exert influence upon a person's learning ..... *Page 129*

YOUR ANSWER: The dentist should determine a patient's attitudes about dental health by considering the economic part of a patient's environment.

This isn't always sound, although some dentists may base a good deal of their appraisal of a patient on his economic level alone.

Of course the dentist will want to take this part of a patient's environment into consideration, for this is an area which frequently affects the dental educational process. The danger lies in excluding other parts of a patient's environment, such as his racial or national origin, his temperament, his interests, or even his general health.

Since low income level probably heads the list of deterrents to dental care, some dentists assume that low income will be associated with lack of interest. This isn't necessarily true, although the culture of many low income groups does place little value on dental health.

Return to page 132 and select the correct answer.

When the dentist has patients who won't take his suggestions seriously or follow his recommendations, he must keep in mind that they are often simply behaving in keeping with their own particular culture.

How should the dentist determine a patient's attitudes about dental health?

By considering the economic part of a patient's environment.....*Page 131*
By considering the patient's total environment.....*Page 134*
By considering the patient apart from his environment.....*Page 136*

YOUR ANSWER: Dr. Frank will probably base his understanding of Grinston's attitude toward X-rays on Grinston's anxiety about the added cost of X-rays.

Not necessarily. Grinston's obvious anxiety about having to pay for something he doesn't think at all necessary might well indicate an attitude problem to Dr. Frank.

Not until Dr. Frank begins to question Grinston, however, is he likely to discover facts about Grinston's past dental experiences and thus increase his own understanding. Only then can the dentist do some effective teaching about X-rays, their function in diagnosis, and the reason for their extra cost. Now it's possible, of course, that Grinston will not be at all receptive to education about roentgenography, depending upon his past experience and possibly upon how much the added expense really bothers him. Hopefully, Dr. Frank's effectiveness as a teacher (another factor which influences learning, you'll recall) will help Grinston to modify his attitude about X-rays.

Please return to page 134 and select another answer.

YOUR ANSWER: The dentist should determine a patient's attitudes about dental health by considering the patient's total environment.

Yes, or as many aspects of it as possible, since environment shapes attitudes and influences future learning.

Another important factor that affects learning is past experience. This too determines attitudes, interests, reactions, and habits. The dentist is particularly concerned with one aspect of this factor, that of the patient's past *dental* experience. If his experiences have been pleasant, the patient is likely to be receptive to dental education. But, if he has had some unpleasant experiences, his anxiety is likely to block his attentiveness and understanding and may even cause rejection of the dentist's attempts to teach.

Let's consider an example. Mr. Grinston had previously been treated by a dentist who seldom employed roentgenography. When Dr. Frank mentions X-rays, Grinston objects on the basis of cost, saying that he has never needed them before. Now Dr. Frank has an education problem: to convince Grinston that X-rays are sometimes necessary for accurate diagnosis and that the dentist is not merely trying to increase his income.

On what will Dr. Frank probably base his understanding of Grinston's attitude toward X-rays?

On Grinston's anxiety about the added cost of X-rays.....*Page 133*
On Grinston's interest in learning about X-rays.....*Page 137*
On Grinston's statement about his previous dental care.....*Page 139*

YOUR ANSWER: Yes, the entire Grinston family will learn the same things about the process of cavity preparation.

If you really believe this, perhaps we had better review quickly what we've been saying about individual differences!

Every person's learning ability is different, including members of the same family. You know from your own experiences that families can vary widely in their abilities—in I.Q., in thinking and reasoning, in temperament, in memory. And we pointed out earlier, even the family environment differs from time to time.

Now if Dr. Frank teaches each Grinston exactly the same thing about cavity preparation, each person will learn and remember in relation to his need, his innate learning ability, his environment, and his past experiences. Mr. Grinston might remember nothing past how much each cavity will cost, whereas his daughter may be concerned only about how many restorations will show when she smiles. Mrs. Grinston may worry so much about the pain involved in the drilling that she can't learn, while Gary might become interested in the instruments used in the process rather than in the process itself.

You can see that individual differences will always affect the kind and amount of learning, even within the same family. Please return to page 139, review the material if necessary, and choose another answer.

YOUR ANSWER: The dentist should determine a patient's attitude about dental health by considering the patient apart from his environment.

Is this really possible? A person is the product of heredity and his environment, and therefore cannot be separated from either.

Since a person's attitudes are affected by his environment, it will be impossible for the dentist to determine any patient's attitudes about dental health without considering some of the factors making up that environment. Of course the more he converses with the patient, the more he is likely to learn about background, culture, economics, interests, temperament, and in turn, about dental health attitue.

We hope you understand why this answer is incorrect. Please return to page 132 now and choose a better answer.

YOUR ANSWER: Dr. Frank will probably base his understanding of Grinston's attitude toward X-rays on Grinston's interest in learning about X-rays.

But we don't know that Grinston has expressed any such interest. All we know is that Grinston has objected to the X-rays on the basis of cost. If finances are a real problem to him, he is more likely to be thinking of money rather than of what he wants to learn about X-rays—those things he doesn't feel are necessary anyway!

As Dr. Frank converses with Grinston, the facts about his past dental experiences will likely come to light. Knowing why Grinston feels X-rays are an unnecessary expense should help Dr. Frank immensely in teaching effectively about the function of roentgenography in diagnosis and the reasons for the extra cost. Of course Grinston can learn, whether he is interested in the subject or not. Just pointing out that X-rays aid in better dental treatment, thereby reducing extra visits, might appeal to him.

We're sure you will be able to find the correct answer now. Return to page 134 and try again.

YOUR ANSWER: The quality of teaching the dentist has had in the past is likely to have the strongest effect on his teaching effectiveness.

Not necessarily, though the dentist's past educational experiences will certainly affect the way he himself will teach.

However, past experience is only one factor which influences a patient's learning capacity or a dentist's teaching effectiveness. What about the dentist's own innate abilities? —his temperament?—his environment? All of these factors play an important part in making him the kind of person he is and, in turn, the kind of chairside teacher he becomes.

Now return to page 140 and select a better answer.

YOUR ANSWER: Dr. Frank will probably base his understanding of Grinston's attitude toward X-rays on Grinston's statements about his previous dental care.

Right. Discussing past dental experience is a good way to get the patient to reveal his present attitudes toward dental treatment or dental education.

In addition to these external factors that influence learning, every individual has unique innate characteristics, such as his native intelligence (I.Q.) and his ability to learn and remember, which are determined by heredity. Environment is so closely associated with heredity that it is often difficult to separate the two, for a person's total abilities determine what he takes from his environment as well as how he changes his behavior as a result of his past experiences.

Since the dentist can contribute only to the patient's environment, we won't go into detail about the aspects of heredity. We are merely pointing out that individuals do differ in their learning ability. The dentist will be most likely to note this in a patient by observing his memory, vocabulary, ability to think abstractly or to recognize similarities and differences, and ability to reason and understand.

If Dr. Frank teaches the entire Grinston family about the process of cavity preparation, will the five people involved learn the same things?

Yes.....*Page 135*
No.....*Page 140*
Possibly.....*Page 142*

YOUR ANSWER: No, the entire Grinston family will not learn the same things about the process of cavity preparation.

Correct. Individual differences in innate learning ability, environment, past experiences, and need account for many of the variations in kind and amount of learning. It is highly unlikely that any two people will learn the same thing or learn in the same way from the same experience, even those within a close-knit family group.

Just as the factors we have been discussing make each patient unique, so the dentist's own environment, past experiences, and innate characteristics will make him unique. This in turn will influence his teaching effectiveness.

For example, the dentist's past experience in being taught may well have a direct bearing on his own teaching. If he learned from his own educational experiences, he will probably try some of the same methods in teaching his patients. Certainly, if he felt dissatisfied with the traditional teaching methods used in educating him, he will want to try different techniques with his own "students." ☆

Which of the following is likely to have the strongest effect on the dentist's teaching effectiveness?

The quality of teaching he has had in the past ..... *Page 138*
The individual differences of his patients ..... *Page 141*
The factors which have made him a distinct individual ..... *Page 146*

YOUR ANSWER: The dentist might best indicate his mastery of subject matter by keeping pamphlets on all new developments in dentistry available for answering patients' questions.

This is one way of contributing to patient education, but how does it indicate that the dentist has mastered the material contained in the pamphlets? In all probability, he hasn't taken time to read most of them!

Patients may find pamphlets or other reading material helpful in explaining certain dental problems. But many problems should be explained orally, so the dentist will naturally want to keep up on technical developments as well as on new ideas for better patient education. Since patients expect the dentist to be an authority in the field of dentistry, this will involve a certain amount of extra study on his part in order to keep up his image.

Now return to page 146 and choose a better answer.

YOUR ANSWER: Possibly the entire Grinston family will learn the same things about the process of cavity preparation.

It will be *very* unusual for five persons to learn exactly the same information, even if they do belong to the same family.

Individual differences in innate learning ability, in temperament, in environment, in past experiences, and in need all contribute to produce variations in kind and amount of learning.

If Dr. Frank teaches each Grinston exactly the same thing about cavity preparation, the learning and remembering might go something like this:

> Mr. Grinston—remembers nothing past how much each cavity will cost.
>
> Mrs. Grinston—worries about the pain involved in the drilling so much that she doesn't learn anything.
>
> Gary—learns about the process Dr. Frank is explaining.
>
> Grindl—learns that none of the restorations will show when she smiles.
>
> Greg—becomes more interested in the instruments Dr. Frank is using than in the process itself.

We hope you see how individual differences do affect learning, even within the same family. Please return to page 13[0] now, review the material if necessary, and choose the correct answer.

YOUR ANSWER: The dentist might best indicate his mastery of subject matter by setting up a teaching machine in the waiting room for patient education on new developments in dentistry.

We agree that this might well contribute to patient education, but a teaching machine doesn't indicate that the dentist himself has a mastery of the new developments in his field. His patients may become better informed than he is in some areas!

Most dentists try to keep up on technical developments, theories, and even new ideas in patient education in dentistry as a matter of course. Let us remind you, however, that just "keeping up" in a cursory manner doesn't necessarily develop a mastery of the subject. Since patients expect the dentist to be an authority in the field of dentistry, they may quickly recognize a lack of knowledge, background, or interest and might lose confidence in such a person.

We hope you see how important a mastery of subject matter can be. Please return to page 146 and choose a better answer.

YOUR ANSWER: The individual differences of the dentist's patients are likely to have the strongest effect on his teaching effectiveness.

Certainly the dentist will adjust his teaching to his patients' individual differences, thereby making his teaching more effective for each one. However, there are other influences which have an even stronger effect on his teaching.

We pointed out, you'll recall, that the factors which influence a patient's learning capacity also influence the dentist's effectiveness as a teacher. These factors include innate ability, temperament, past experiences, and environment. If these factors are such strong determiners of what a patient will learn, then they should have just as much influence on how a dentist will teach and how well he will reach his patients.

Return to page 140 and select the correct answer.

YOUR ANSWER: The dentist might best indicate his mastery of subject matter by keeping abreast of new developments in the field of dentistry and by making use of educational principles in his teaching.

Right. Being able to discuss any aspect of dentistry with his patients and helping them learn in the process indicates to them the dentist's mastery of his subject.

One main difficulty in keeping up with new developments as well as in trying to educate patients is the time involved. The educational process does take time—time which is often at a premium in the dental office. Thus the dentist who is really concerned about educating his patients in addition to treating them has to plan carefully where he can fit the education into the time allotted each patient.

Of course each dentist will use different methods, but here are some basic suggestions:

1. Allow more time per patient if possible.
2. Discuss dental subjects instead of sports events, politics, or other unrelated topics with the patient.
3. Have auxiliary personnel aid in the teaching process.
4. Supplement oral teaching with material for the patient to read at home.

Now read the statement below carefully, deciding whether it is true or false.

The time factor affects both the quality and the quantity of the dentist's teaching.

True.....*Page 148*
False.....*Page 150*

YOUR ANSWER: The factors which have made the dentist a distinct individual are likely to have the strongest effect on his teaching effectiveness.

Yes, the dentist's own abilities, background, and past experiences have made him the kind of person he is. These factors will naturally influence his effectiveness as a teacher. Another influencing factor is the dentist's mastery of the subject matter he will be teaching. Mastery includes the ability to organize and adapt the material to individual patients as well as the ability to communicate this material to the patient.

Patients look to the dentist as an authority in his field, and so he should be. In order to teach effectively, the dentist must be prepared to answer his patients' questions on any phase of dentistry, from fluoridation to electric toothbrushes, relating the information to the patients' own dental health as often as possible.

How might the dentist best indicate his mastery of subject matter?

By keeping pamphlets on all new developments in dentistry available for answering patients' questions.....Page 141
By setting up a teaching machine in the waiting room for patient education on new developments in dentistry.....Page 143
By keeping abreast of new developments in the field of dentistry and making use of educational principles in his teaching.....Page 145

YOUR ANSWER: The new factor is "time available for teaching."

We discussed *time* previously and only mentioned it again to point out that the dentist concerned about teaching will find the time to do it.

If you will take time to review when you return, you will discover that the new factor joins the others we have already listed:

1. The dentist's own environment, past experiences, and innate characteristics.
2. The dentist's mastery of his subject matter.
3. The time available for patient education.

Each factor affects the dentist's teaching directly.

Now return to page 148 and choose the correct answer.

YOUR ANSWER: The statement is true.

Right. The time available for patient education has to be utilized carefully in order to assure that neither quality nor quantity will suffer.

Since most people tend to make time for the things they really want to do, the dentist who is genuinely concerned about patient education will be no exception. His interest will spur him on to keep up with new developments in his field, to develop varied education techniques, and to find the time for putting them into practice.

On the other hand, if the dentist isn't interested in educating his patients or doesn't think it is important, any attempts he does make at teaching will probably be half-hearted and ineffective. For example, this type of dentist might resort to delivering the same information in the same way to every patient regardless of individual differences. His hit-or-miss methods may be successful occasionally, but on the whole his teaching would not be very effective.

What *new* factor have we been discussing as another aid to the dentist's effectiveness as a teacher?

Time available for teaching.....*Page 147*
Interest in teaching.....*Page 151*
Attention to new dental developments and individual differences.....*Page 153*

YOUR ANSWER: Emotional atmosphere is a critical factor in the educational process, for it increases the probability of learning.

You're considering only one side of the question. The emotional atmosphere between a dentist and his patient can certainly be an aid to learning but only if the atmosphere is one conducive to making the patient feel at ease.

An atmosphere in which fear, anxiety, or tension is prevalent is more likely to *decrease* the probability of learning and is thus detrimental to the learning process. A patient, for example, who is so apprehensive about the pain that might be involved in a visit to the dentist is not apt to be very interested in learning about dental health.

Since a person's behavior is often controlled by his emotions, his learning is bound to be affected by the kind of emotional atmosphere that is created by his own attitudes or by the dentist's actions.

Return to page 151 and choose a better answer now.

YOUR ANSWER: The following statement is false:

The time factor affects both tne quality and quantity of the dentist's teaching.

Let's think about this statement again. We listed *time* as one of the factors relating to the dentist's teaching effectiveness, saying that the wise dentist will take this factor into consideration.

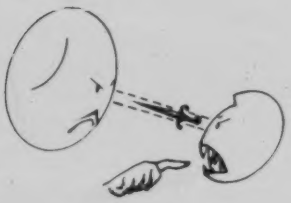
It stands to reason that both the quality and quantity of teaching will necessarily be affected by the amount of time the dentist allows for educating his patients. A dentist who spends little time in teaching will be likely to produce neither quality nor quantity. And spending considerable time in patient education does not *assure* quality. Real quality of teaching depends upon a number of factors, all of which can influence teaching effectiveness.

We're going to discuss another of these factors now.

Please continue by turning back to page 148.

YOUR ANSWER: The new factor is "interest in teaching."

Yes, the dentist's concern in providing patient education will prompt him to make time available for teaching. It will also encourage him to give attention to new dental developments and to individual differences in his patients.



Now let's turn our attention to another set of factors, those which affect the communication between dentist and patient in a teaching-learning situation. One such factor, and a critical one at that, we'll call emotional atmosphere. This is a rather intangible thing which does a great deal to help or to hinder the teaching-learning process. Undirected emotional anxiety, for example, decreases efficiency in learning, while a sense of success and security tends to increase the probability of learning. (We say undirected emotional anxiety because no learning is accomplished without some kind of anxiety.)

There are several factors which directly influence the emotional atmosphere between a dentist and his patient. We'll discuss these soon. But first: Why does emotional atmosphere seem to be such a critical factor in the educational process?

It increases the probability of learning.. Page 149
It influences the dentist's teaching effectiveness.....Page 152
It directly affects learning efficiency....Page 154

YOUR ANSWER: Emotional atmosphere is a critical factor in the educational process, for it influences the dentist's teaching effectiveness.

Although this is a possibility, it is not the reason emotional atmosphere is so critical to the learning process.

Any kind of teaching is affected by the atmosphere that develops between teacher and learner. This would be particularly true in a dental situation where the teaching is conducted on such an individual basis. However, we discussed the influence of emotional atmosphere on the communication between dentist and patient and thus in turn on the patient's learning. In a sense, the emotional atmosphere can actually control the kind and amount of learning which takes place. This is what makes it so critical to the educational process.

Now return to page 151 and choose the correct answer.

YOUR ANSWER: The new factor is "attention to new dental developments and individual differences."

These two factors certainly have a great deal to do with a dentist's teaching effectiveness, but we've discussed both of them previously.

Here are the specific items we've covered which relate to the dentist's teaching:

1. The dentist's own environment, past experiences, and innate characteristics.
2. The dentist's mastery of his subject matter.
3. The time available for patient education.

Of course, taking individual differences into consideration is important also. We talked about this under factors relating to the patient's capacity to learn.

Now return to page 148 and choose the correct answer.

YOUR ANSWER: Emotional atmosphere is a critical factor in the educational process, for it directly affects learning efficiency.

That is correct. The emotional atmosphere can very definitely control the kind and the amount of learning done by the patient.

One influence shaping the emotional atmosphere is the way the patient and the dentist feel about themselves, for this affects the way each feels about other people with whom they come in contact. If a person is an insecure, frustrated type of individual, he will probably fear other people and act accordingly; the atmosphere he creates about him is likely to be one of tension, fear, distrust, or indifference.

In contrast, the secure, well-adjusted individual who respects himself will probably respect other people and have a real interest in them. The atmosphere he creates is likely to be one of freedom, sincerity, warmth, and understanding. Of course it is this latter atmosphere which creates a favorable climate for learning in any kind of situation, and the dental office is no exception.

According to this theory, who actually creates the emotional atmosphere in the dental office?

The dentist.....*Page 156*
The patient.....*Page 158*
Both dentist and patient.....*Page 160*

YOUR ANSWER: The dentist's development of good teaching techniques.

No, this is not the factor we have been discussing, although it is important that the dentist be aware of teaching methods.

Let's review briefly. We've been talking about how critical the emotional atmosphere between dentist and patient can be to the teaching-learning process. A warm, friendly, relaxed atmosphere fosters a certain freedom of communication which is essential. Conversely, a tense, cold, unfriendly atmosphere will be detrimental both to teaching and to learning.

While the dentist and his patient both contribute to setting the emotional atmosphere, the dentist has the responsibility of controlling the situation as much as possible. He is able to do this in a number of ways. As you return to page 160 to choose another answer, review the possibilities we mentioned.

YOUR ANSWER: The dentist actually creates the emotional atmosphere in the dental office.

You're half right! The dentist's feelings about himself and about the patient in the chair play a big part in setting the emotional tone for learning.

But what about the patient? The way he regards himself, as well as his feelings about the dentist and the dental office, can be just as important in creating the emotional atmosphere. If he comes to the office feeling secure and respected, the chances of his learning about dental health are far greater than if he arrives feeling fearful, anxious, or under tension.

The ideal teaching situation occurs when both participants, teacher and learner, are emotionally stable people. But remember, this is the *ideal*. Most times the dentist will have to do some additional work to create a more favorable emotional atmosphere than the one which naturally exists.

Please return to page 154 and select the complete answer.

YOUR ANSWER: The dentist's recognition of the importance of a good emotional atmosphere.

The dentist may recognize the importance of this factor to the communication between himself and his patient and still not do anything about it.

We are interested in your choosing an answer which restates the factor we just discussed—the one which has to do with establishing a good patient relationship. The dentist has the responsibility of controlling the atmosphere. He is able to do this in a number of ways, particularly by his attitude toward the patient. This in turn paves the way for better communication, an essential characteristic of the teaching-learning process.

Now return to page 160 and choose a better answer.

YOUR ANSWER: The patient actually creates the emotional atmosphere in the dental office.

You're half right! The patient's feeling about himself and about the dentist or dental office in general play a big part in setting the emotional tone for his own learning.

But what about the dentist? The way he regards himself and his patient can be just as important in creating the emotional atmosphere. If he feels secure and respected, he is more likely to be able to make his patient feel at ease, which in turn, will increase his teaching effectiveness.

Of course, the ideal teaching situation is more apt to occur when both participants, teacher and learner, are emotionally stable people. But remember, this is the *ideal.* Most times the dentist will have to do some additional work to create a more favorable emotional atmosphere than the one which naturally exists.

Please return to page 154 and select the complete answer.

YOUR ANSWER: The dentist's interest in and concern for his patients.

Yes, the dentist's attitude helps to set the emotional atmosphere, thus determining the kind of communication between himself and his patients.

The patient will probably absorb no new information and attitudes or develop any new habits and skills until he feels at ease. If his attention is focused on his own anxiety, for example, he won't be in any frame of mind to concentrate on what the dentist might be trying to teach him.

Most people are quick to sense insincerity, forced cheerfulness and attention, or impatience. If the dentist thinks to himself, "I hate to listen to some patients talk so I stick something in their mouths to keep them quiet!" or "I don't intend to waste *my* time explaining things to patients who won't understand anyway," he will not be fooling many patients when he makes a pretense of teaching. He might as well not "waste his time!"

How to you rate emotional atmosphere as a factor in the communication between dentist and patient?

Important.....*Page 161*
Critical.....*Page 163*
Worth consideration.....*Page 165*

YOUR ANSWER: Both dentist and patient create the emotional atmosphere in the dental office.

Right, for both come to the meeting conditioned by their individual characteristics, their past experiences, and their attitudes about themselves and others. Therefore, both inevitably contribute to the atmosphere of the teaching-learning situation.

The dentist, however, can control the atmosphere a great deal. It is actually up to him to establish the kind of an atmosphere in which he and his patient feel free to communicate with one another. This freedom increases the effectiveness of any teaching or learning that takes place.

In other words, the dentist attempts to establish a good patient relationship—something most dentists do as a matter of course. The dentist who is warmly interested in his patient without passing judgment on his behavior, who takes individual differences into account, who tries to relieve anxiety and fear if necessary, and who is willing to listen as well as to talk will greatly increase communication between himself and his patients.

We've been discussing a significant factor of the emotional atmosphere which directly affects communication between dentist and patient. What is that factor?

The dentist's development of good teaching techniques.....Page 155
The dentist's recognition of the importance of a good emotional atmosphere.....Page 157
The dentist's interest in and concern for his patients.....Page 159

YOUR ANSWER: I rate emotional atmosphere as important.

We agree, but we would prefer your thinking of the emotional atmosphere in even stronger terms, such as essential, critical, crucial, or, if you prefer—*very* important!

If good communication depends upon emotional atmosphere, then it should certainly be recognized as an essential part of every teaching-learning situation in the dental office. Keep in mind that the dentist has the responsibility for controlling the atmosphere as much as possible, mainly by developing and showing the right attitudes toward his patients.

Now return to page 159 and choose the correct answer.

YOUR ANSWER: Dental caries is a bacterial disease of the calcified dental tissues producing typical lesions that originate in characteristic locations. The active etiological factor is acid produced by bacteria on restricted areas, often or long enough to enable the acid there to disintegrate the mineral structure.

No, the average patient would probably not understand the scientific terminology of this explanation. There are at least three terms (caries, lesions, etiological) that even a well-educated patient might not understand.

Although the dentist has a deeper knowledge of the process of dental caries, he must be able to simplify his vocabulary when talking with a patient without "talking down" to him. If he insists on using the "proper" terminology, he either will miss his patient entirely or will have to spend twice the time in defining the difficult words for the patient interested enough to ask questions.

It is easier on both participants in the teaching-learning situation if the dentist will explain complex dental processes so the patient can readily comprehend them. In addition, the communication problem will be greatly aided.

Return to page 167 and choose a simpler explanation.

YOUR ANSWER: I rate the emotional atmosphere as critical.

And so do we. An atmosphere conducive to learning helps the patient to shift his attention from himself to what the dentist might be trying to teach.

One additional factor which often affects the emotional atmosphere is the dental office environment itself. Since the dentist is used to the surroundings and feels quite at ease in them, he often forgets that his patients may have entirely different reactions, depending on their previous dental experiences, of course.

If the patient enters the dental office with feelings of anxiety about the dental instruments, the X-ray machine, the possibility of pain, or the expense involved, he will most likely become tense, frightened, nervous—emotionally upset in general. Through the proper attitude and understanding, the dentist can improve the emotional atmosphere.

We've discussed several factors which contribute directly to the emotional atmosphere between dentist and patient: their attitudes toward themselves and others, establishment of a good patient relationship and a relaxed atmosphere by the dentist, and the effect of the dental office environment. What in turn does the emotional atmosphere affect?

The quality of communication between dentist and patient.....Page 164
The attitude of the dentist toward his patients' fear of dental treatment.....Page 166
The feelings of the patient about the dental office environment.....Page 168

YOUR ANSWER: The emotional atmosphere affects the quality of communication between dentist and patient.

Yes—directly. The less tension there is, the better the communication is likely to be. And the better the communication, the more teaching and learning that can be accomplished.

Although atmosphere may well be the most critical factor affecting communication, the level of vocabulary is an additional factor of importance. Most patients simply will not understand dental terminology. Therefore, in order to help the patient's understanding, the dentist should use lay terms or at least explain his scientific language.

Here's a good example of how not to explain toothbrushing to a patient:

> The brush is placed in the mouth, the bristles pointing gingivally, flat against the buccal surfaces of the teeth. The brushing is accomplished by proceeding with a sweeping motion toward the occlusal edges, the bristles stimulating the gingival tissues as well as cleaning the buccal and interproximal surfaces of the teeth. This brushing technique should be followed routinely around the arch so that finally all the buccal, labial, and lingual tooth surfaces in the maxilla and mandible will have been cleaned, and the gingival soft tissues will have been stimulated.

Please go ahead to page 167.

YOUR ANSWER: I rate emotional atmosphere as worth consideration.

That it is, but haven't we convinced you that it is more important than mere consideration might warrant?

After all, if the communication between a dentist and his patient is so radically affected by an intangible factor like atmosphere, it should certainly be recognized as an essential part of every teaching-learning situation in the dental office.

The dentist who is aware of this and is alert to each patient as an individual, will find his teaching easier and more effective. In turn, his patients will be more likely to learn something about dental health from him, for they will sense his concern for them as well as his interest in teaching.

Return to page 159 and select a stronger answer.

YOUR ANSWER: The emotional atmosphere affects the attitude of the dentist toward his patients' fears of dental treatment.

Not necessarily. The dentist is likely to be sympathetic about his patients' fears whether or not the emotional atmosphere is conducive to good teaching and learning.

The atmosphere of the dental office definitely affects the educational process. In order to teach, the dentist must be able to communicate with his patient. And in order to learn, the patient must sense an interest on the part of the dentist as well as an atmosphere free from tension. Remember, the emotional atmosphere itself is determined by factors such as the attitudes of the dentist and patient toward themselves and each other and the general environment of the dental office.

Now return to page 163 and choose a better answer.

Which explanation of dental caries below might be best understood by the average patient?

Dental caries is a bacterial disease of the calcified dental tissues producing typical lesions that originate in characteristic locations. The active etiological factor is acid produced by bacteria on restricted areas, often or long enough to enable the acid there to disintegrate the mineral structure.....Page 162

Dental caries results when food debris remains on tooth surfaces and produces bacteria in concentration sufficient to dissolve the mineral content of tooth enamel.....Page 169

Dental decay results when certain types of food material lodge around the teeth and are broken down by bacteria into harmful products which attack the teeth.....Page 171

YOUR ANSWER: The emotional atmosphere affects the feelings of the patient about the dental office environment.

It might, but the patient's attitude toward the dental office is more likely to have been determined by his previous dental experiences.

Of course, the patient can sense the atmosphere of the office. If he comes to an appointment with definite fears and finds the office atmosphere full of tension, his own anxiety is likely to increase. This will neither stimulate good communication between himself and the dentist nor increase the effectiveness of any teaching or learning that might occur.

We think you can find a better answer. Return to page 163 and try again.

YOUR ANSWER: Dental caries results when food debris remains on tooth surfaces and produces bacteria in concentration sufficient to dissolve the mineral content of tooth enamel.

No, although this is preferable to the extremely scientific explanation. Many patients will still have trouble with words such as caries, debris, mineral content, and tooth enamel.

Communication between dentist and patient can be greatly improved if the dentist will take time to simplify his explanations of complex dental processes to the point that most of his patients will readily comprehend. This may well take some practice, perhaps by the trial and error process, for the dentist is usually accustomed to thinking in scientific terms. Some patients will ask if they don't comprehend, but many will think they appear ignorant if they say they don't understand.

Please return to page 167 and choose the simplest explanation.

YOUR ANSWER: Visual materials should be regarded as a substitute for teaching.

No, although too often educators use visual material as substitutes for preparation instead of simply as aids. This is a dangerous habit for any educator to acquire.

It's true that supplementing teaching by the use of pictures, models, specimens, charts, slides, diagrams, and the like can certainly improve learning and its retention. While a picture may be worth a thousand words, some explanations are still necessary.

These aids should never be allowed to take over the teaching, however, particularly in a field such as dentistry where careful explanations are essential. The aids lose their effectiveness if allowed to stand alone; they should be used in conjunction with other teaching procedures.

Return to page 174 and select the correct answer.

YOUR ANSWER: Dental decay results when certain types of food materials lodge around the teeth and are broken down by bacteria into harmful products which attack the teeth.

Right. This explanation is the one most likely to be understood by the average patient unfamiliar with scientific terminology.

The dentist who gives scientific explanations in laymen's language enables his patients to understand the meaning of dental services and improves communication as well. It is his responsibility, moreover, to be certain that the patient comprehends; many patients who don't understand won't ask questions for fear of appearing ignorant.

In some cases the dentist may not understand the patient's terminology, especially if they use regional expressions or have pronounced accents. Therefore, the dentist should also make certain that he comprehends the patients' questions and comments.

Even if the dentist and patient are using about the same level of vocabulary, there is still chance for misunderstanding. For example, the dentist may say, "You don't brush your teeth enough," or "You should brush more often." The patient's comprehension would depend upon his understanding of *enough* or *more often*.

What is the relationship of vocabulary to communication?

The more scientific the terminology the dentist uses the better his communication with the patient will be.....Page 172
The closer the dentist and patient are in terminology, the less chance there is for misunderstanding.....Page 171
The lower the level of vocabulary used by dentist and patient, the higher the probability of comprehension.....Page 176

YOUR ANSWER: The more scientific the terminology the dentist uses, the better his communication with the patient will be.

No. In fact, just the opposite is true for most patients. The average patient is not scientifically oriented, particularly in the field of dentistry and will no doubt be unfamiliar with dental terminology. The dentist who insists on using this technical vocabulary will find communication lessened instead of bettered.

We suggested that the dentist has certain responsibilities as far as vocabulary level is concerned:

1. To use the layman's language in explaining dental services.
2. To make certain the patient comprehends.
3. To be certain he understands the patient's terminology.

Following these suggestions will help to avoid misunderstandings and thus improve communication between dentist and patient.

Return to page 171 and choose a better answer.

YOUR ANSWER: Visual materials should be regarded as a means to insure learning and its retention.

We said visual materials, used *with* proper and sufficient explanation, increased the likelihood of learning taking place and being retained; there was no mention of their being considered a means in themselves.

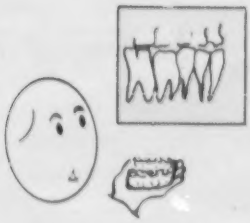
It's true that supplementing teaching by use of pictures, models, specimens, charts, slides, diagrams, and the like can certainly improve learning and its retention. Yet the dentist who depends upon visual material as a sure means to help a patient learn and retain that learning will be sadly disappointed. Visual aids can add much to the effectiveness of communication only when used in conjunction with other teaching procedures.

Please return to page 174 and choose a better answer.

YOUR ANSWER: The closer the dentist and patient are in terminology, the less chance there is for misunderstanding.

Correct. Similarity of vocabulary level should pave the way for more efficient teaching and learning.

A third factor which contributes to the effectiveness of communication is the use of visual aids. Since words alone are easily misunderstood, visual material can increase the likelihood of learning taking place and being retained.



There's a great variety of visual material available for teaching dental health. Here are some of the possibilities:

Posters and pictures
Pamphlets and periodicals
Charts and graphs
Diagrams and cartoons
Models and mockups
Slides and filmstrips
Teaching machines
Specimens
Bulletin boards
Chalk boards

Visual materials such as these, used properly and at the right time, can reinforce learning and increase the effectiveness of other teaching techniques.

How should visual materials be regarded?

As a substitute for teaching.....Page 170
As a means to insure learning and its retention.....Page 173
As an aid to teaching.....Page 177

YOUR ANSWER: The improvement in communication benefits treatment procedures.

No, it might improve the patient's ability to follow the dentist's directions, but it won't affect the dentist's own technical skill.

Let's review briefly. We listed numerous visual aids which might be used by the dentist to help him in his explanations. Then we pointed out that these materials must be regarded as aids, not to be shown to the patient without careful explanations. If used properly and discriminately, the additional visual material will increase the likelihood of the patient learning more and remembering longer. This of course improves communication.

In other words, improving communication through the use of visual aids will benefit the educational process itself. And what comprises the educational process? Return to page 177 and choose the correct answer.

YOUR ANSWER: The lower the level of vocabulary used by dentist and patient, the higher the probability of comprehension.

Not necessarily. We said the vocabulary level should be as *equal* as possible, but that doesn't mean it has to be a *low* level. Educated patients would not want to converse on the level suitable to 10-year olds. Yet we should remember that many persons with a limited vocabulary have difficulty understanding others using the same simple type of vocabulary. Each patient must be approached on his own vocabulary level.

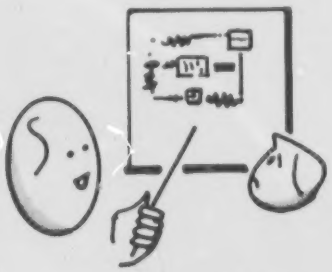
Whatever the level of approach, the dentist should strive to help his patient understand the explanations of dental services. In most cases this means simplifying dental terminology and using the layman's language as much as possible in explanations. In addition, the dentist must be certain that he and the patient fully understand one another.

Now return to page 171 and choose another answer.

YOUR ANSWER: Visual materials should be regarded as aids to teaching.

Quite true. The aids need to be used in conjunction with careful explanation.

Educational psychologists maintain that the use of two or more senses at a time reinforces learning. If a patient hears the explanation for proper toothbrushing, sees it demonstrated on a model, and practices with a toothbrush in his own mouth, he is much more likely to remember what to do and when to do it than if the dentist merely explained the process verbally.



Indiscriminate use of visuals is nearly as bad as nonuse.

The indiscriminate use of visual materials is nearly as bad as total nonuse. The dentist should attempt to select the best aid for each situation, making sure the aid is accurate and authentic in detail so no misunderstanding will arise.

And this improvement in communication, of course, benefits what?

Treatment procedures.....*Page 175*
Teaching and learning.....*Page 178*
Explanations and demonstrations.....*Page 180*

YOUR ANSWER: The improvement in communication benefits teaching and learning.

Right. The total educational process should improve as a result of increased efficiency and effectiveness in communication.

Let's think again about the factors that affect the communication between a dentist and his patient:

1. Emotional atmosphere: this is affected by
    a. The feelings the patient and dentist have about themselves.
    b. The feelings they both have about other persons.
    c. The kind of patient relationship established by the dentist.
    d. The dental office environment.
2. The level of vocabulary used by dentist and patient:
    a. Dentist has the responsibility to use terms patients will understand and to make certain they comprehend his explanations.
    b. Patients with pronounced accents or dialects may have more difficulty in understanding the dentist and in turn will use terms unfamiliar to him.
3. The use of visual aids:
    a. Posters, pictures, pamphlets, charts, diagrams, models, slides, filmstrips, specimens, and mock-ups are some of the available aids for teaching dental health.
    b. These aids, if used properly and wisely, can reinforce learning and its retention.

Now go on to the next page for a summary and review of the material we have covered in this program.

Summary

The dentist helps his patient to learn by providing the elements necessary for patient participation:

1. Recognition of needs.
2. Statement of needs.
3. Motivation.
4. Recognition of individual differences.
5. Favorable atmosphere.
6. Suitable vocabulary.
7. Visual aids.
8. Review (reinforcement).
9. Evaluation.

Another way of looking at the educational process is to compare it with the actual practice of dentistry. In other words, the dentist should use comparable steps in teaching as he does in his practicing dentistry.

Practice of dentistry	*Teaching*
(1) History and examination	(1) Examination and establishment of good emotional atmosphere
(2) Diagnosis or dental needs	(2) Diagnosis of educational needs
(3) Treatment plan	(3) Teaching plan (materials and methods)
(4) Treatment	(4) Teaching
(5) Evaluation	(5) Evaluation

Please go on to page 181.

YOUR ANSWER: The improvement in communication benefits explanations and demonstrations.

This statement would probably be better turned around—improvement in explanations and demonstrations would benefit communication.

We said, you'll recall, that the proper use of visual aids can stimulate motivation, increase patient interest, and add variety to the dentist's teaching. Thus an explanation of periodontal disease will certainly be enhanced by good pictures, charts, diagrams, and models showing the effect of the disease on teeth, or by a series of slides on the subject. Remember: the use of two or more senses at a time reinforces learning.

If communication is also improved through the use of visual materials, isn't the total educational process likely to benefit? You should have no difficulty in selecting the correct answer now. Return to page 177 and try again.

Review Test

Here is your first question:

Below are some of the factors we have discussed as ones influencing the educational process:

Environment
Past experience
Innate characteristics
Interest
Vocabulary
Emotional atmosphere
Visual aids

How many of these factors influence the dentist's effectiveness as a teacher? Choose the best answer.

The first three.....*Page 182*
The last four.....*Page 184*
None of them since they all influence the patient's capacity for learning.....*Page 186*
All of them.....*Page 191*

YOUR ANSWER: The first three factors influence the dentist's effectiveness as a teacher.

This is not the best answer. Let's examine the list again:

Environment
Past experience
Innate characteristics
Interest
Vocabulary
Emotional atmosphere
Visual aids

Certainly a dentist's own environment, past experience, and innate characteristics will play a part in his teaching effectiveness. But what about his interest in patient education, the level of vocabulary which he uses, the emotional atmosphere which he helps to create, and the visual aids which he employes to help him? Won't all of these factors also influence his effectiveness in teaching?

Please go to page 191.

YOUR ANSWER: The educational process is the learning of new information skills, attitudes, and habits.

This is a true statement as far as it goes, but the educational process includes more than *learning*. The other part of the process is equally important. Can you remember what it is?

Remember: the patient is not participating in the educational process alone. The dentist and his patient share in the process, one as teacher and one as learner. Now you should have no difficulty in recalling the correct answer.

Please return to page 191 and try again.

YOUR ANSWER: The last four factors influence the dentist's effectiveness as a teacher.

This is not the best answer. Let's take another look at the list:

Environment
Past experience
Innate characteristics
Interest
Vocabulary
Emotional atmosphere
Visual aids

Certainly the dentist's interest in patient education, the level of vocabulary which he uses, the emotional atmosphere which he helps to create, and the visual aids which he employs to help him will all play a part in his teaching effectiveness. But what about his own environment, his past experiences, and his innate characteristics? Won't these factors also help to make his teaching more or less effective, just as they influence a patient's learning capacity?

Think it over—then go to page 191.

YOUR ANSWER: The educational process is the teaching of new concepts with attention to individual differences, atmosphere, vocabulary, and visual aids.

This is a true statement, but it doesn't go far enough. The educational process includes more than *teaching*.

The dentist as a teacher does not participate in the educational process alone. His patients play an equally important role as learners. Now you should have no difficulty in recalling the correct answer.

Please return to page 191 and try again.

YOUR ANSWER: None of the factors influence the dentist's effectiveness as a teacher since they all influence the patient's capacity for learning.

Hold on! Either you're guessing or you haven't been reading carefully during the second part of this program. Let's take another look at the list:

Environment
Past experience
Innate characteristics
Interest
Vocabulary
Emotional atmosphere
Visual aids

Surely, as you reexamine the factors above you can find *some* which contribute to effective teaching. What about visual aids? We said that properly used visual material can reinforce learning; therefore it must also make teaching more effective. And what about vocabulary level? Isn't it important for the dentist to use terminology which his patients can understand? This also makes for more effective teaching.

You no doubt recognize other factors now which influence a dentist's teaching.

Please go to page 191.

YOUR ANSWER: The educational process is the combination of the process of teaching and the process of learning.

Yes, the two processes are so closely associated that they are often referred to as the teaching-learning process.

Below are eight statements about communication between a dentist and his patients. Read them carefully and decide how many of them are true. Then choose the correct series of numbers.

1. Communication is affected by the emotional atmosphere.
2. Persons tend to communicate well whatever the atmosphere.
3. The dentist who shows a warm interest in his patients can increase the effectiveness of communication.
4. A dentist's willingness to listen to his patients has little to do with the process of communication.
5. Teaching techniques are more significant to communication than sympathetic concern for the patient.
6. The dental office environment can have an adverse effect on communication.
7. The dentist should use scientific terminology to improve communication about dental services.
8. Visual aids help to make communication effective and efficient.

Statements 1, 3, 6, and 8 are true.....Page 188
Statements 2, 3, 5, 7, and 8 are true.....Page 190
Statements 1, 4, 6, and 8 are true.....Page 192
Statements 2, 1, 5, and 7 are true.....Page 194

YOUR ANSWER: Statements 1, 3, 6, and 8 are true.

Correct. Communication is affected by the emotional atmosphere, the dentist who shows a warm interest in his patients can increase the effectiveness of communication, the dental office environment can have an adverse effect on communication, and visual aids help to make communication effective and efficient.

Also, the emotional atmosphere may be detrimental to communication, communication involves listening as well as talking, the best teaching methods will be of little help to the dentist who shows no concern for his patients, and the use of scientific terminology can impair communication rather than improve it.

Please go to the next page.

Read the paragraph below carefully; then answer the question.

Dr. Frank is discussing the results of Mr. Grinston's recent full-month X-rays with him. After Dr. Frank has pointed out the need for certain restorations, Mr. Grinston inquires about possible methods for reducing the likelihood of further dental decay. He asks such questions as the following:

> What about electric toothbrushes?
>
> Will chewing gum cause cavities?
>
> What kind of toothpaste is best?

Dr. Frank notes that Grinston is interested and well motivated toward learning, so he selects several adult pamphlets for Grinston to read while waiting for the anesthetic to take effect. In addition, he suggests that Grinston follow the rules on a posted chart for proper brushing in order to achieve a clean mouth and better oral health in general.

What has Dr. Frank forgotten?

That motivation is necessary to learning.....Page 193

That visual aids should be accompanied by oral explanation.....Page 195

That short-range goals are more meaningful to patients than long-range goals..Page 197

That individual differences determine a patient's learning capacity.....Page 199

YOUR ANSWER: Statements 2, 3, 5, 7, and 8 are true.

This is not the correct answer. Let's look at those five statements once more:

2. Persons tend to communicate well whatever the atmosphere. *False.*

   An atmosphere full of fear, anxiety, or tension can be quite detrimental to communication, you'll recall.

3. The dentist who shows a warm interest in his patients can increase the effectiveness of communication. *True.*

5. Teaching techniques are more significant to communication than sympathetic concern for the patient. *False.*

   The best teaching methods will be of little help to the dentist who evinces no concern for his patients, for communication between them will likely be stifled; few persons like an unsympathetic doctor.

7. The dentist should use scientific terminology to improve communication about dental services. *False.*

   The more scientific the explanations, the less understanding the patient is likely to have.

8. Visual aids help to make communication effective and efficient. *True.*

Please return to page 187 and select the correct answer.

YOUR ANSWER: All of the factors influence the dentist's effectiveness as a teacher.

Right. In addition, the seven factors we listed may influence a patient's capacity for learning and the effectiveness of communication between a dentist and his patient. In short, the factors influence the educational process in general.

And what leads us to the next question:

What is the educational process?

The learning of new information, skills, attitudes, and habits.....Page 183
The teaching of new concepts with attention to individual differences, atmosphere, vocabulary, and visual aids.....Page 185
The combination of the process of teaching and the process of learning.....Page 187

YOUR ANSWER: Statements 1, 4, 6, and 8 are true.

This is not the correct answer. Let's look at those four statements again.

1. Communication is affected by the emotional atmosphere. *True*
4. A dentist's willingness to listen to his patients has little to do with the process of communication. *False.*

   Communication involves listening as well as talking!
6. The dental office environment can have an adverse effect on communication. *True.*
8. Visual aids help to make communication effective and efficient. *True.*

Please return to page 187 and select the correct answer.

YOUR ANSWER: Dr. Frank has forgotten that motivation is necessary to learning.

Dr. Frank recognized, you'll recall, that Mr. Grinston seemed interested and well motivated toward learning. The kind of questions Grinston asked indicated this interest. Therefore, Dr. Frank didn't have to provide further motivation to arouse Grinston's interest. Dr. Frank was in the happy situation of having a patient concerned about good dental health.

Please return to page 189 and answer the question again.

YOUR ANSWER: Statements 2, 4, 5, and 7 are true.

This is not the correct answer. In fact, all four of the statements you selected are false. Were you guessing? Let's look at the statements again:

2. Persons tend to communicate well whatever the atmosphere.
   An atmosphere full of fear, anxiety, or tension can be quite detrimental to communication, you'll recall.
4. A dentist's willingness to listen to his patients has little to do with the process of communication.
   Communication involves listening as well as talking!
5. Teaching techniques are more significant to communication than sympathetic concern for the patient.
   The best teaching methods will be of little help to the dentist who evinces no concern for his patients, for communication between them will likely be stifled.
7. The dentist should use scientific terminology to improve communication about dental services.
   The more scientific the explanations, the less understanding the patient is likely to have.

Please return to page 187 and select the correct answer.

YOUR ANSWER: Dr. Frank has forgotten that visual aids should be accompanied by oral explanation.

Yes. This is the best answer. Dr. Frank handed the pamphlets to Grinston without answering his questions orally. In addition, he merely pointed out the chart on proper brushing with no demonstration or explanation.

Now, here is your last question:

> When should evaluation be used in the educational process?

Choose the best answer below.

At the end of a teaching-learning experience to determine what the patient has learned and how well the dentist has taught ..... *Page 196*

Before setting goals to determine their effectiveness in motivation and after the goals have actually been achieved ..... *Page 198*

With each step of the educational process to determine learning, teaching effectiveness, and general progress toward goals ..... *Page 200*

YOUR ANSWER: Evaluation should be used in the educational process at the end of a teaching-learning experience to determine what the patient has learned and how well the dentist has taught.

This is fine as far as it goes, for evaluation certainly should be used at this point. However, there are other times when evaluation is necessary. Doesn't the dentist need to evaluate ways of motivating his patients and types of visual aids to use? Shouldn't the dentist and patient together evaluate the kind of goals to set? You can no doubt think of other points in the educational process when evaluation is essential to effective teaching and learning.

Please return to page 195 and select the correct answer.

YOUR ANSWER: Dr. Frank has forgotten that short-range goals are more meaningful to patients than long-range goals.

Not really. Dr. Frank and Mr. Grinston didn't actually set any goals. The only thing that Dr. Frank mentioned which *he* might have regarded as a goal was that proper brushing would help Grinston achieve a clean mouth and better oral health in general. However, since Grinston is obviously interested in reducing further dental decay, this goal would be quite meaningful to him, even though it is a rather long-range one.

Please return to page 189 and answer the question again.

YOUR ANSWER: Evaluation should be used in the educational process before setting goals to determine the effectiveness in motivation and after the goals have been achieved.

We'll agree that evaluation is certainly appropriate at these two points. The patient, of course, will not be determining the effectiveness of the goals in motivation, but the dentist might. However, there are other times when evaluation is necessary. For example, shouldn't the dentist stop to evaluate his own teaching methods, including the kinds of visual aids he may be using and the ways he might motivate his patients?

You can no doubt think of other points in the educational process when evaluation is essential to effective teaching and learning.

Please return to page 195 and select the correct answer.

YOUR ANSWER: Dr. Frank has forgotten that individual differences determine a patient's learning capacity.

It is certainly true that individual differences can determine what and how well a person will learn, but there was nothing in the paragraph to indicate that Dr. Frank forgot about individual differences. You'll recall that he selected pamphlets written for adults on the particular topics in which Grinston was interested, an indication of some awareness of individual differences.

Please return to page 189 and answer the question again.

YOUR ANSWER: Evaluation should be used with each step of the educational process to determine learning, teaching effectiveness, and general progress toward goals.

This is correct. Continuous evaluation, from the recognition of needs to the completion of a specific learning experience, is most important to effective teaching and learning.

.....

Congratulations on your successful completion of this program. In your own efforts as a teacher, we hope you will find many opportunities to apply the principles we have been discussing.

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